

# *the* Appendix

**FUTURES  
OF THE PAST**

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#### The Appendix

Volume 2, Issue 3

*The Appendix* is a quarterly journal of experimental and narrative history; though at times outlandish, everything in its pages is as true as the sources allow. *The Appendix* solicits articles from historians, writers, and artists committed to good storytelling, with an eye for the strange and a suspicion of both jargon and traditional histories. A creature of the web, its format takes advantage of the flexibility of hypertext and modern web presentation techniques to experiment with and explore the process and method of writing history.

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**Cover Image:** The Futurama II exhibit at the 1964 World's Fair, created by General Motors, imagined a future of polar and submarine colonies. Our cover image is a scene from a diorama depicting climate scientists who inhabit a South Pole monitoring station that "turns Antarctica into a world-wide weather eye," as the original promotional materials put it. (Image via Wikimedia Commons)

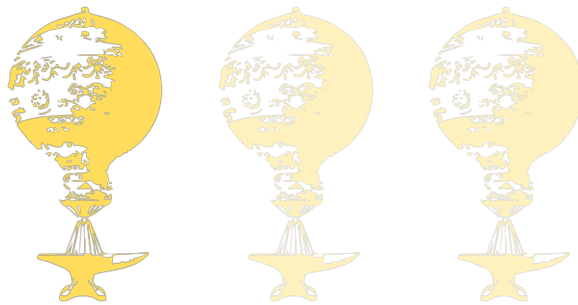
#### **A note on citations:**

For reasons of readability and space, this edition includes only select footnotes and citations. The online version of this issue includes complete citation records for each article at:

<http://theappendix.net/issues/2014/07>

CHAPTER ONE:

# Bad Predictions



How have past generations imagined their collective futures—and how do we?  
Detail from Pieter Brueghel the Elder, *The Tower of Babel*, 1563, Kunsthistorisches  
Museum (via Wikimedia Commons)



## Letter from the Editors: Futures of the Past

Nabopolassar, like any ancient Mesopotamian king worth his salt, was not a modest man. A self-described “son of a nobody,” he had risen from obscurity to lead a revolt against Assyria and reign over a restored Babylon for twenty years. The king’s conquest of the city of Nineveh even made its way into the oral tradition that would become the Hebrew Bible (“Woe to the city of blood, full of plunder, never without victims”).

But Nabopolassar was interested in building up as well as tearing down. In a clay inscription he deposited in the foundation of a temple, Nabopolassar boasted of his restoration of ancient ruins, “which had weakened and collapsed because of

age; whose walls had been taken away because of rain and deluge.” The King, it turns out, had mobilized his peacetime troops to dig into the foundations of the ruined temple and explore the relics of previous ages.

In this buried inscription, Nabopolassar proudly added another title to his royal epithets: “the one who discovers bricks from the past.”

Nabopolassar, it has been argued, was the first archaeologist. But his inscription looks forward as well as backward—not to the past, but to an imagined future. By burying this text in the foundation of his rebuilt temple, Nabopolassar was thinking



ahead to the picks and shovels of future generations—to a time when he would be the ancient king, when his new temple walls would crumble and collapse.

In an oblique way, he was thinking about us.

“Futures of the Past” is an issue about how past generations have reckoned their collective futures. But it’s also about how the razor’s edge of the present comes up against the haziness of futurity, and what happens when that hazy future becomes inscribed, remembered, and—eventually—forgotten. We’re interested here not just in retro curiosities or Tomorrowland nostalgia (although there’s some of that), but in the work that the future does in shaping history—as a utopian dream, a set of collective anxieties, or simply as a story that we tell about where we come from and where we hope to end up.

Several pieces in this issue suggest that we should study the futures of the past not simply because they’re quaint or charming, but because they show us that even our most confident predictions can go wrong.

That’s the inspiration behind the first “chapter,” or monthly grouping of articles, that kicks off this issue. We call it “Bad Predictions,” and it includes prophecies that didn’t quite hit their mark, as well as fears of dystopian futures that were, unhappily for us, all too real.

The chapter begins with Grant Wythoff’s research

into the origins of radio. Wythoff argues that wireless telegraphy—and the science fiction dreams it inspired—stirred up prescient fears about the ways that emerging technologies can enable government eavesdropping. From the Golden Age of science fiction we venture backward into classical antiquity, where Sarah Bond and Matthew Neujahr explore how ancient Roman dream interpretation offered an unreliable glimpse into futurity. In her article on the reproductive politics of spaceflight, Lisa Rand shows how Cold War era visions of space-faring women remained mired in misogyny. And while the seventeenth-century predictions about future scientific discoveries described by Anna Marie Roos are often eerily accurate, we’re still waiting for “Attaining Gigantick Dimensions” and “the Recovery of Youth.” Other articles, like Rebecca Onion’s exploration of nuclear fears among ‘80s kids or Marissa Nicosia on fears of “monstrous” futures after the English Civil War, dig deeper into the theme of dystopian futures, while Christopher Dietrich narrates an unexpected swerve toward a collective future of resource scarcity and sectarian violence in Vienna, 1975.

Not all futures are bad, however. Some visions of the future swiftly recede into pasts bathed in the haze of nostalgia, a theme explored in Chapter Two: “Futures Past.”

In a standout piece of longform journalism, Chris A. Smith journeys to Zambia to uncover a story of musical dreams deferred. Next, Michael P. Williams mines twentieth-century Japanese youth



Paul Gauguin, *Where Do We Come From? What Are We? Where Are We Going?*, Museum of Fine Arts, Boston, 1897 (via Wikimedia Commons)

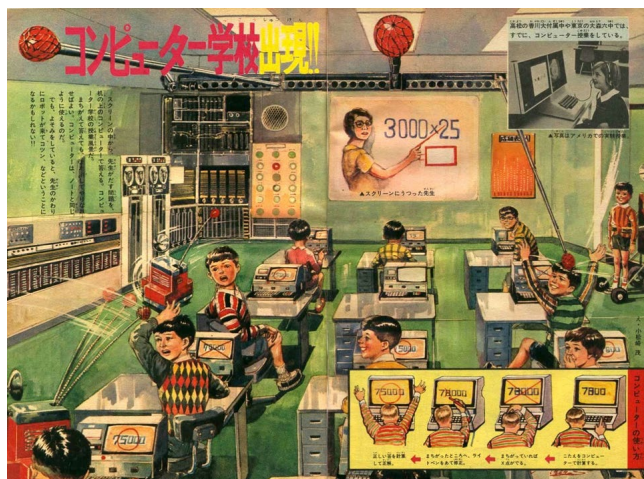


culture and its fascination with dystopias and utopias, from visions of robots in the classroom to a cult-classic 1990s Super Nintendo game. Appendix editors Lydia Pyne and Ben Breen document imagined futures (of Neanderthals and island micronations, respectively) that never quite panned out, while artist Jed McGowan illustrates a bygone age of prophecy. Brooke Palmieri's unexpectedly racy history of seventeenth-century Quakers reminds us that almost all religious movements have utopian roots. Rounding out the chapter, Laura Martin uncovers the utopian "cadets" that inspired a beloved children's book, and Aaron Sachs summons the ghost of Lewis Mumford.

Our final chapter, "The Politics of the Future," reminds us that prediction is a political act. Imagined futures can be powerful tools for social change, but they can also reproduce the injustices of the present—as Erin Pineda explores in a thought-provoking feature article about the 1964 New York World's Fair and the Brooklyn Civil Rights organization that tried to stop it. Matthew Goldmark asks whether the fictional future of Star Trek repackages colonialism in space, and Rachel Marcy draws on over a dozen interviews with former ballet dancers to reconstruct how dreams of US-Soviet cultural exchange became mired in political saber rattling. The supposed Dead Sea Scroll at the center of Michael Press's article was either a priceless treasure or a laughable fake depending on your point of view, while the mutants of the 1960s Marvel comics universe were, according to John Wenz, uneasy amalgams of scientific progress and nuclear anxiety. Finally, Kevin Cannon returns with another illustrated map, this time of Yuri Gagarin's first flight into space.

In the fascinatingly wide-ranging conversation that closes "Futures of the Past," noted historians D. Graham Burnett and David Gissen ask, "How do you see beyond the horizon line?"

Burnett relates the experiences of one William Scoresby, an early nineteenth-century whaler who reported a fascinating atmospheric phenomenon. Perched high on a crow's nest, scanning the horizon for icebergs, Scoresby realized that "reflected light under the cloudy sky could actually throw up onto the underside of the clouds a nebulous and difficult-to-read, but nevertheless legible, *reverse*



For the purpose of maintaining order, the future classroom will come equipped with watchful robots that rap students on the head if they lose focus." *Shonen Sunday*, 1969.

Dark Roasted Blend

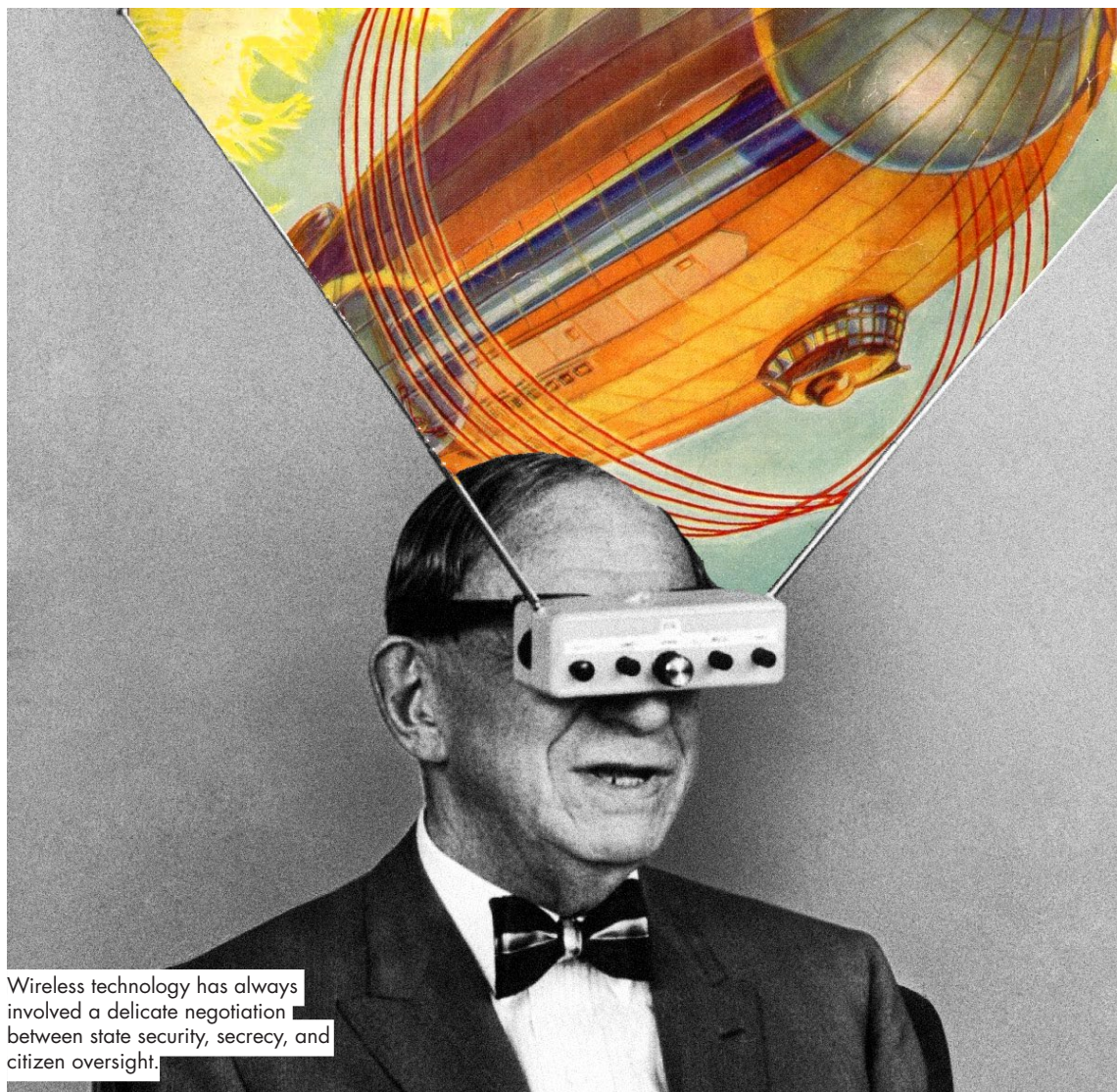
image of the patterns of pack ice." As Burnett points out, this is a fabulous metaphor. By looking upward, into the limitless expanse of the sky and the nebulous outlines of clouds, it is possible to predict the very solid, and very dangerous, contours of icebergs ahead. By looking up, we learn about what's lurking below.

And, perhaps, when we look forward into the future, we're actually looking backward, at where we began. The brilliant final poem of T. S. Eliot's *Four Quartets*, published at the height of World War II, was about precisely this:

We shall not cease from exploration  
And the end of all our exploring  
Will be to arrive where we started  
And know the place for the first time.  
Through the unknown, unremembered gate  
When the last of earth left to discover  
Is that which was the beginning;  
At the source of the longest river  
The voice of the hidden waterfall  
And the children in the apple-tree  
Not known, because not looked for  
But heard, half-heard, in the stillness  
Between two waves of the sea.

But if that all sounds a bit too heady, at least we can take solace in the words of George Carlin.

"The future," he reminded us, "will soon be a thing of the past."



Wireless technology has always involved a delicate negotiation between state security, secrecy, and citizen oversight.

# The Invention of Wireless Cryptography

by Grant Wythoff

The wireless telegraph station in Sayville, New York was one of the most powerful in the world. Constructed by the German company Telefunken in 1912, it served as a transatlantic relay point for diplomatic messages and business communications. It was a beacon among amateur wireless enthusiasts around the United States who could tune their home-made sets to the station's nightly press dispatches. All of this changed when one of those amateurs uncovered the station's true purpose. The Navy seized the station in 1915 on suspicion of relaying covert commands from the German Empire to U-Boats in the Atlantic, and a congressional bill was introduced to ban all civilian wireless activities from the airwaves. The interruptions to the story that follows consist of excerpts from Hugo Gernsback's serial novel *The Scientific Adventures of Baron Münchhausen*, which ran in *Electrical Experimenter* magazine right as news of the wireless cryptography scandal unfolded.



Static was always a problem as the summer heat rolled in.

Situated on a hundred-acre plot along the Long Island coastline and “dropped in a mosquito-infested field,” the Sayville wireless plant began experiencing the seasonal interference that comes with longer days and warmer weather in May 1915. At that point little older than the twentieth century itself, wireless telegraphy (a precursor to radio) was not an entirely reliable medium. Debates over the precise cause of this seasonal static soon broke out among the tinkerers and oddballs of the early wireless community. Some said that radio waves experience more interference as they propagate through denser, more humid air. (There was still talk at this time of the existence of a luminiferous aether.) Others speculated that because messages came in clearer at night, the heat of the summer sun on the station’s aerials was affecting their transmitting capabilities.

By late summer, Sayville operators announced that interference from so-called equinoctial storms was forcing them to restrict messages to official government communications. Some commenters quipped that wireless buffs were getting cause and effect mixed up: “they said the electrical effects [of the station] absorbed all the moisture and made Sayville dry as a Saratoga chip,” referring to the potato chip first invented in Saratoga Springs, NY in the 1850s. Perhaps the station itself was altering its surrounding atmospheric conditions.

When one contemplates the marvel of sculptured sound on a graphophonic record, and realizes that from the cold vorticity of line there may magically spring the golden lilt of the greatest song voice that the world has ever heard, then comes the conviction that we are living in the days of white magic.

At the rate of a dollar per word, civilians and government officials alike could relay messages from Sayville to its sister station at Nauen, Germany. In addition to commercial and diplomatic communications, Sayville sent out press dispatches every night at 9:00 that amateurs around the country tuned in to using their hand-built crystal detector



sets. Receiving transmissions from the Sayville station was the gold standard for both wireless sets and their owners (who referred to themselves as ‘muckers’), and electronics manufacturers regularly promised easy reception of Sayville transmissions in advertisements for their products. The static that came with summer weather was nothing new for these wireless professionals and amateurs. Seasonal disturbances were simply a part of the natural rhythms of a new medium.

But this summer, Telefunken, the German company that owned the station, seemed absolutely determined not to let any atmospheric or climatic disturbances interfere with the transmission of messages between Sayville and Nauen. By June, to the surprise of the wireless community, the Sayville station could be heard clearly at much greater distances. Local observers reported that three 500-foot towers had been added to the system of aerials atop the plant. These new aerials were coupled with an increase in transmitting power from 35 to 100 kilowatts, effectively tripling the plant’s abilities “in order to insure absolute communication, under all conditions and particularly through the heavy static obtaining during the summer weather.” The *Electrical Experimenter* reported that Telefunken had imported the new equipment from Rotterdam, a Dutch port city clinging to its neutrality between Germany to the east and occupied Belgium to the west.

The outbreak of the great war of 1914 found me in the midst of the study of several new inventions which I was trying to perfect. But I welcomed the war, nevertheless, with a glad heart. Here at last was my long hoped for chance to get even with Prussia against whom I had nursed a growing hate during the past few years. My 'révanche' was at hand.

'Yes, Monsieur le Président,' I replied fervently, 'it was my misfortune to be born in Prussia, but I assure you that there is to-day no more ardent, patriotic Frenchman in France than myself. Down with the tyrant Prussia!'

The newly expanded station introduced a number of groundbreaking innovations designed by Telefunken, including a new lettered keyboard that produced a perforated paper tape of transliterated Morse code messages ready to be fed into an automatic transmitter. Type in alphabetic letters just as you would on a QWERTY keyboard, and out comes a ticker tape of machine-readable Morse



The cover of the August, 1915 issue of *The Electrical Experimenter*, featuring an illustration of the Sayville station.

[Magazineart.org](http://Magazineart.org)

code. Messages could now be sent at up to 150 words per minute, a speed that would have been impossible for any manual operator of a single Morse code key.

On the receiving end of things, “a specially tuned microphonic form of amplifier” allowed messages to ring loudly throughout the station. Before, specially trained operators had to carefully listen in over headphones to often-staticky signals repeated over and over again for the sake of clarity. The act of human transduction was thus replaced by a more sensitive mechanism.

Most importantly, Sayville’s new five-hundred foot aerials “insure[d] a fluent, consistent discharge of radio wave into the air” so powerful that it only needed to be sent once. Before Sayville’s upgrade, atmospheric disturbances would produce holes in transatlantic signals. In order to ensure the reception of a complete message, transmissions were thus sent several times so that they could be cross checked on the other side. According to Sayville’s manager Dr. Karl G. Frank, the repetition of messages aroused fears of espionage. “Suspicious persons,” he complained, “were prompt to construe the process of repetition into a series of communications with German submarines.” It was his hope that such concerns would be alleviated by the more powerful, one-off transmissions.

With tangible records on paper tape, transmitted once only and ringing out clearly at the station for all to hear, the German-owned station seemed to be operating more transparently than ever at a time of increasingly strained relations with the US. Yet it would soon become clear that quite the opposite was true. Telefunken’s aspiration to so-called “absolute communication” between Sayville and Nauen in fact enabled forms of never-before-seen cryptographic deception.

We tested the plant thoroughly and after we had satisfied ourselves that it would work for at least 300 days I opened the telegraphone circuit and began to register this message to you. It will be the last one which you will receive for 30 days or more. As it must needs take us from five to 10 days to build a transmitting plant on Mars, you need not expect to hear from us for



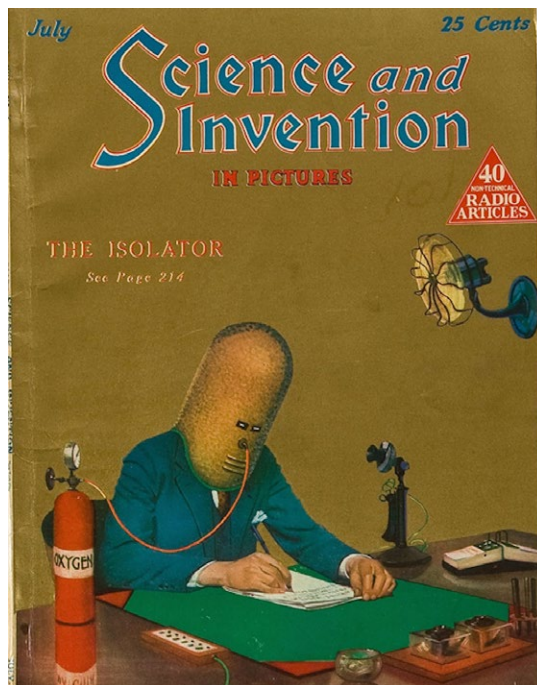
from 35 to 40 days. You might, therefore, commence to 'listen in' beginning with the 35th day from tonight. No message can ever be repeated, for the 'wiping' electromagnets of the telegraphone wipe out the magnetic impulse from the steel wire as quickly as they pass the transmitting magnets. Neither can you transmit a message to me, for no provisions were made to relay your messages to us when on Mars.

On July 7, seemingly without warning, the American government revoked the operator's license for Sayville. That night, a force of Naval engineers and "bluejacket" sailors seized control of the plant from its German employees. Rumors surfaced that a similar takeover had been executed at the station in Tuckerton, New Jersey, which transmitted regularly to Hanover. The *New York Times* found that the decision to seize control of the wireless stations had been made after a series of conferences among members of President Woodrow Wilson's cabinet.

But what had led to their decision? The official statement from the Atlantic Communication Company (which operated the plant) failed to offer answers, and speculation ran rampant. In an editorial to the August issue of *Electrical Experimenter*, Hugo Gernsback argued that the takeover of this powerful station was absolutely necessary since there is no telling who received its messages or how they were read. Explaining why the government didn't seize transoceanic cable stations as well as wireless plants, he wrote:

A cable message during the time of its dispatch stays on the cable. It has only one destination; no one can "tap" the message without serious difficulties. Not so with the "wireless." Its waves being propagated in every direction, a thousand stations, or more, if properly equipped, can catch the message anywhere within the receiving radius of the sending station.

Gernsback was right. The Germans had anticipated the possibility of a war with England and, with it, the risks of severed telegraph lines. Sayville was the answer. Thus when England actually did cut the German cables early in August 1914, Germany



Hugo Gernsback's "Isolator" helmet as featured on the July, 1925 issue of *Science and Invention*.  
Laughing Squid

retained links to the outside world. Thanks to the wireless technology at Sayville, telegraphic traffic between America and Germany went on the same as before—with the difference that the messages now traveled right over the heads of Germany's enemies.

I may add, therefore, that all conversations between Baron Münchhausen and myself, which I shall publish hereafter, are exactly as stated, taken from my brother's stenographic reports. The original notes are open to anyone doubting their truth.

But effectively relaying these coded messages posed unique problems that demanded a new approach to cryptography. Now that the summer heat no longer troubled the Sayville plant, debates in the wireless community shifted to how lossless signals might be disguised. In one proposal, hidden instructions were interspersed within regular, ordinary-looking messages by slightly lengthening the spaces between dots and dashes (see No. 1 Coded below). Perfectly uninterrupted, strong signals meant that gaps in a message could actu-

ally mean something rather than being a product of noise or static.

Another proposed scheme involved adding additional dots to the end of normal Morse characters. Thanks to the plant's novel keyboard-specific automation of Morse signaling, it's possible that this overcoding could have even been mechanized through what the *Electrical Experimenter* called "a small attachment of an electrical nature, perhaps, which could be fitted secretly to one of the automatic paper tape perforators or to one of the magnetic key transmitting mechanisms." Ever since the invention of the telegraph in the early nineteenth century, the cadence or rhythm characteristic of an individual telegraph operator's sending touch was known as their "fist." Operators were identifiable by their fist, and cryptanalysts used these unique rhythms to track patterns in the location of messages and their messengers. An automated sender could thus not only plant hidden messages within wireless signals, it would completely anonymize them.

The Navy enforced strict rules overseeing Sayville, but overlooked several glaring holes. Seeing as only four of the eighteen people working

at Sayville were employees of Telefunken, there was never a moment that outgoing and incoming transmissions didn't pass through government scrutiny. "Every message is censored before it goes out," an article in the September, 1916 issue of the *Electrical Experimenter* explained. "A Government officer sits there with a blue pencil and if he suspects the message has another meaning than what is on its face he returns it to the sender; or he may paraphrase its meaning, saying the same thing in different words." The idea was that this re-wording of the message would upset any code hidden within that precise wording—if it contained one.

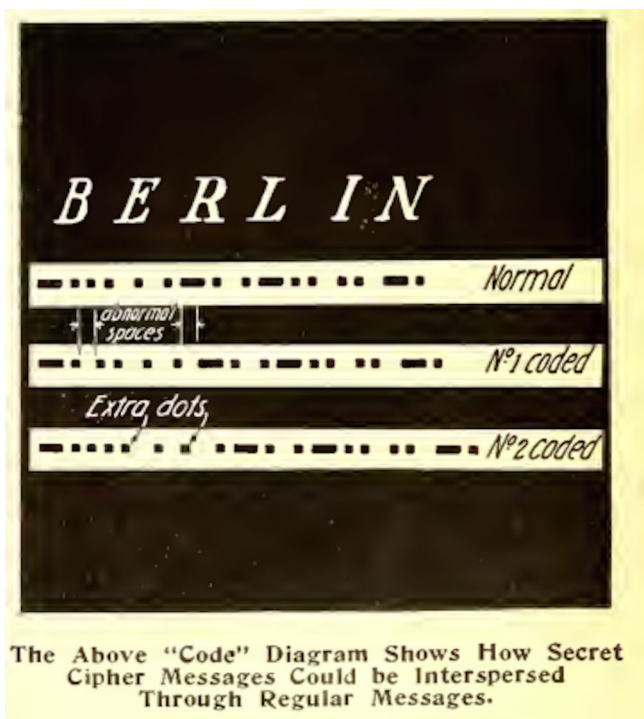
What the government overlooked was that the fact that covert messages could be hidden not within the content of a given message, but rather within the signaling itself. If the speculations about an automated transcoding mechanism tucked within the Sayville sending apparatus were true, a US government employee could type out a message that contained hidden instructions to German U-Boats without even realizing it. But without a record of the transmissions themselves, only a Morse code paper tape or a transcript of the initial text, government censors didn't have the ability to analyze the messages directly.

This is where an amateur experimenter named Charles E. Apgar stepped in.

The first clash with the Germans was spectacular. We rushed upon them in the early morning, but instead of our artillery using the ordinary explosive shells we used my compressed laughing gas cylinders. These were constructed in such a way that they would open upon striking the ground. The soldiers of rank and file were quipped with a similar device, who, instead of shooting bullets, shot compressed laughing gas cylinders.

Our first attack proved as great an astonishment to us as to the enemy. When we began shooting the laughing gas at the ferocious-looking Germans their expressions changed suddenly to abominable grins.

I had long since discovered that the German



*Electrical Experimenter*, hosted at [archive.org](https://archive.org)

advance could not be stopped by ordinary means, so I adopted extraordinary measures.

Charles Apgar was a hobbyist new to the wireless scene who in 1913 had quietly devised the first ever means of recording a wireless telegraph signal on a phonograph cylinder. At some point, the US Secret Service became aware of Apgar's tinkering and immediately understood its potential. Apgar was approached by Louis R. Krumm, the Department of Commerce's Chief Radio Inspector about checking up on Sayville. In a profile of his work for the Secret Service, Apgar wrote,

I was called in on the matter and told to 'get busy.' The work of making the records began each night at 11 o'clock and continued for two or three hours, dependent on the accumulation of messages at the Sayville station. The next morning a translation of the records was made and a copy of them turned over to [Secret Service Chief William J.] Flynn, which permitted of immediate comparison with the censored message records received by other departments of the Government.

Telefunken's Karl G. Frank was shaken by this new possibility. Upon hearing of Apgar's recordings, Frank immediately sent out a press release: "The statement that Mr. Apgar can record messages sent out by wireless on a phonographic cylinder is hardly worth discussing. That is physically impossible. I haven't ever heard of it being done. If Mr. Apgar has accomplished it he should get his idea patented and perhaps we will buy it."

Apgar's records allowed the government to compare the messages that were submitted for approval to the censors with the signals that actually left Sayville's aerials. Messages that seemed to contain little more than innocent commercial transactions were found to hide instructions for German submarines throughout the Atlantic. With the simple addition of a word, a space, or a minor repetition—present neither on the text submitted to the censors nor on the ticker tape produced by the machine—covert communications could be sent right under everyone's nose. In addition, Apgar's recordings captured unsigned messages flashed from Nauen to Sayville, transac-



A Columbia Phonograph Company cylinder, c. 1905, similar to the one Apgar used to make his recordings.  
[futuremuseum.co.uk](http://futuremuseum.co.uk)

tions that hadn't been properly registered. Apgar's phonograph cylinders allowed an audible record of what was actually transmitted and received by the station to be poured over and decrypted by the Secret Service.

Had the defenders found out during our advance on Berlin that we were not their compatriots they would have been powerless, as their numbers were pitifully small as compared with the immense armies of the Allies. However, they never suspected us. As we had naturally taken charge of all the telegraph and telephone lines immediately upon emerging from our forests, we sent, of course, fake war reports to Berlin all day long purporting to come from the front. The deception could not have been more complete. So you can readily see that all the 'news' which the Nauen wireless plant sent out broadcast each day over the entire world during the month of March was nothing but a hoax, manufactured expressly for it by our own General Staff!

When the *Electrical Experimenter* made public that Apgar was responsible for uncovering the station's covert actions, he became a hero among the amateurs. An advertisement ran in the next month's issue for the very headphones Apgar used to listen





*Electrical Experimenter*, hosted at [archive.org](https://archive.org)

in on Sayville's transmissions and hear that something was in fact out of the ordinary.

Meanwhile, the full extent of Karl Frank's deception was exposed by the press. Frank's activities as a German spy went far beyond the operation at Sayville. In August, *The Providence Journal* sent a formal complaint to the Secretary of the Navy, including the charge that Dr. Frank was one of the principle German secret agents in the United States. The *Journal* charged that he had tried, among other things, to obtain intelligence on the fire control system used by the US Navy, and to gain access to a battleship in the New York Navy Yard. Two years later, the *New York Times* reported that Dr. Frank was arrested at his home in Millburn, New Jersey and taken to Ellis Island, presumably for deportation.

Through the glass portholes at the bottom of the machine we could see the Marconi-wires glowing in their characteristic green glow. Immediately we were lifted toward the moon overhead at a frightful speed. In less than 90 seconds the entire American continent became visible, and in a few more seconds the earth in its true form as an immense globe stood out against a pitch-black sky.

Once the full extent of the Sayville wireless spy ring became clear, public attention inevitably returned to the sinking of the *Lusitania* at the beginning of that very summer, in May 1915. Speculations and conspiracy theories abounded on Sayville's role in the sinking of the ship by a German U-Boat. Were the instructions to attack sent by Sayville? How could the government have allowed the Germans to triple the station's power in the very next month?

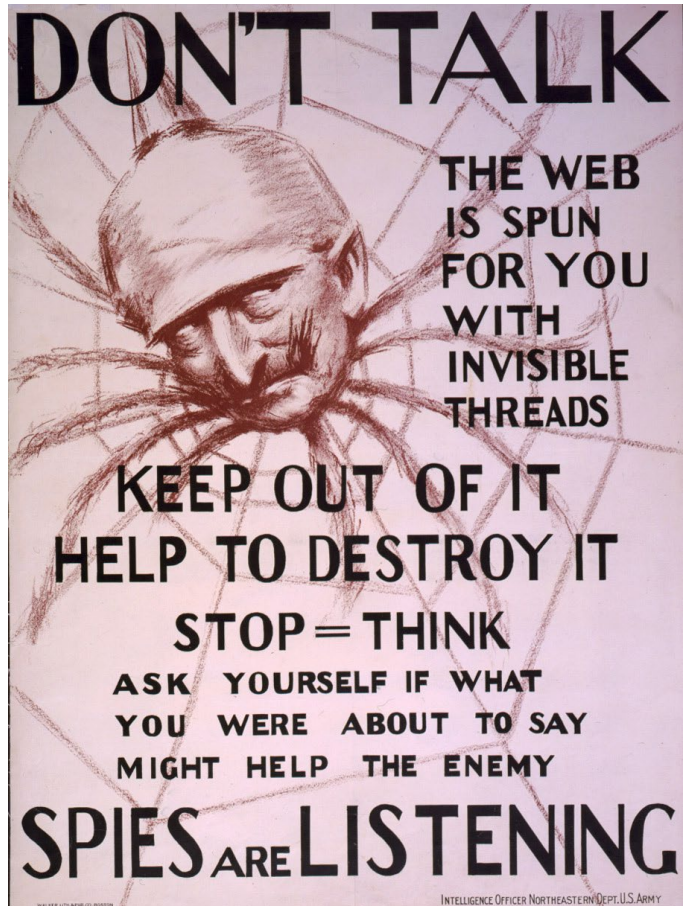
One popular history of the German secret service published at the tail end of the war advanced the theory that when the British admiralty received a request from the *Lusitania*'s Captain William Thomas Turner for protection as the ship approached the English coast, Sayville responded with duplicitous



information before anyone else could. The authors of this book claimed that Sayville was able “to flash a false reply with a perfect British Admiralty touch. ... The British Admiralty also received Captain Turner’s inquiry, just as the Sayville operator had snatched it from the air, and despatched an answer: orders that the *Lusitania* proceed to a point some 70 or 80 miles south of the Old Head of Kinsale, there to meet her convoy. Captain Turner never received that message. The British Government knows why the message was not delivered, though the fact has not, at this date, been made public.”

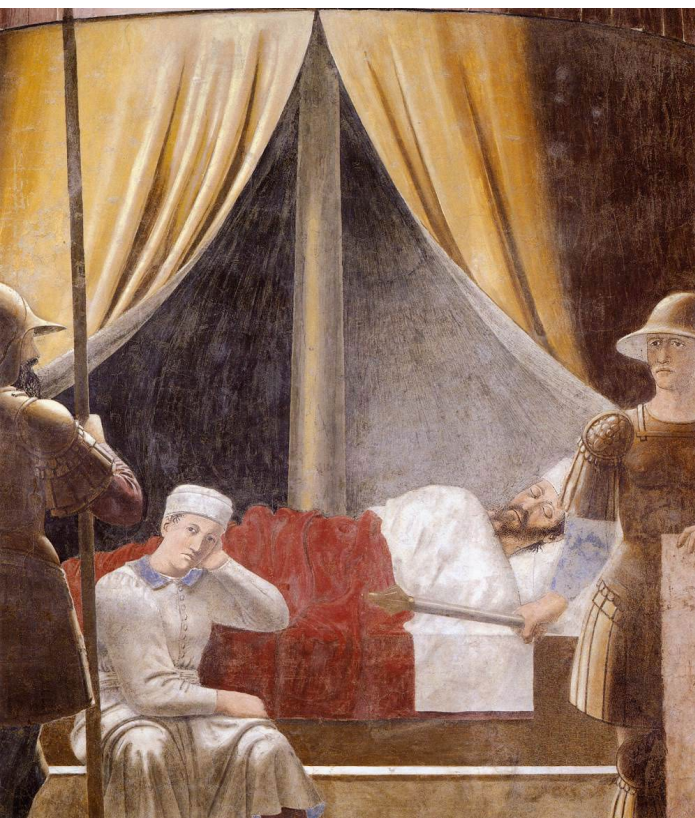
The experimenter community greeted Apgar’s decisive contribution to the war effort with great enthusiasm, holding him up as an exemplar of what a formerly closed, quirky group of amateur tinkerers could offer to the public at large. But it was Apgar’s discovery of the inherent insecurity of the airwaves that led several American congressmen to draw up legislation that would ban all amateur radio activities. Citing security concerns, the Navy took control of the airwaves for the remainder of the Great War. Once it was over, they didn’t want to give it back, setting up one of the first battles over public and private interests in broadcast regulation. The Alexander Wireless Bill, though it never passed, is a reminder today of the close connections between state secrets and amateur eavesdropping.

Today, the word “cable” has become synonymous with encrypted diplomatic communications—like those included in the famed Wikileaks documents—despite the fact that these messages are now sent via e-mail. The story of Sayville serves as a reminder that wireless technology, from its inception, involved a delicate negotiation between state security, secrecy, and citizen oversight.



A World War One propaganda poster depicting Kaiser Wilhelm II as a spider at the center of an invisible web, c. 1918.  
Library of Congress

But I note by my chronometer that the time is up and in a few seconds the telegraphone wire on my radiotomatic on the moon will be to full capacity. So I must cut off short. Au revoir dear boy, and pleasant dreams till to-morrow...’ A low rhythmic hum for a few seconds, then click, click-click, click- click-click, click, a snapping sound and the ether between the Moon and old mother Earth was undisturbed once more.



## Divine Reverie: Revelation, Dream Interpretation, and Teeth in Antiquity

by Sarah E. Bond and Matthew Neujahr

You might say the Roman emperor Septimius Severus was a dreamer, but he wasn't the only one.

The ancient tabloid known as the *Historia Augusta* records that not long after coming to Rome, a young Severus made the mistake of wearing a cloak to an imperial banquet. To correct his fashion faux pas, he was lent a toga belonging to the emperor. That night, Severus dreamed that he suckled at the udders of a she-wolf. Later, while in Spain as a young magistrate, he dreamed he should repair the Temple of Augustus at Tarra-co. Yet another had him gazing upon Rome from a vista while a lyre and flute played in the background. For Severus, these were prophecies of his ascension to the highest position in the empire—

and the messages in his dreams turned out to be right. In April of 193 CE, the troops proclaimed the African-born Severus emperor.

Severus would be neither the first nor the last great leader to have his dream life preserved for posterity. Yet dreams held a particular significance in the myriad cultures of antiquity. They were conduits to the divine in the ancient Mediterranean—and those who could interpret dreams successfully stood to gain a great deal.

A number of buildings and dedications survive from antiquity with inscriptions indicating they were erected due to inspiration from a dream. In Latin, this is often noted with the phrase 'ex visu.'



Oneiromancy is the name given to dream divination, from the Greek words *oneiros* (ὄνειρος: dream) and *manteia* (μαντεία: prophetic power). Accordingly, a dream diviner was called an *oneiromantis* (ὄνειρόμαντις). But not all inhabitants of the ancient world believed in the divine origins of dreams. Cicero, who wrote a treatise on prophecy called *On Divination* around 45 BCE, was one notable skeptic. For the physician Galen (129-c. 216 CE), however, dreams could transmit both prophetic messages and bodily ailments. It was said that Galen's fame as a physician had been heralded by a dream in which the god of medicine, Asclepius, appeared to his father. Asklepieia (sanctuaries dedicated to Asclepius) often featured incubation areas designed to inspire the reception of healing dreams to address visitors' ailments. Galen used dreams to diagnose patients, and even wrote a short book on the subject he titled *On Diagnosis in Dreams*.

Only one complete dream manual has survived from antiquity, the *oneirocritica* (ὄνειροκριτικά) by Artemidorus of Daldis. Likely writing in the second and perhaps early third century CE, Artemidorus argued that dream interpretation could be an empirical practice rather than simply a service of swindlers, as alleged by writers such as the satirist Juvenal.

Many themes in the dreams of antiquity are familiar to dreamers today. Where they differ is in the interpretation. Today, we tend to interpret dreams of teeth falling out as indicative of anxiety. Yet Romans favored a rather more complex interpretation, often centered on teeth as representative of individuals or objects. Tooth loss was especially significant. The historian Suetonius claimed that while in Greece, the future emperor Vespasian dreamed that fortune would begin to shine on him and his family as soon as the emperor Nero lost a tooth. Sure enough, the next day, a physician showed him a tooth that he had earlier extracted from the mouth of the infamous Julio-Claudian. Our aforementioned dream diviner, Artemidorus, writes extensively about the subject of teeth. To



Cameo of Septimius Severus and Julia Domna, Cleveland Museum of Art.  
Sarah Bond, 2014



T57 Mandible from a Roman skeleton.  
Courtesy of Kristi



Ancient Roman votive offering of teeth,  
c. 200 BCE to 200 CE.  
Wellcome Images

**Artemidorus' Directions:** Match up the lost tooth with its position in order to reveal the individual or property addressed in the dream.

**Top Teeth:**  
Important Individuals

**Lower Teeth:**  
Inferior Individuals

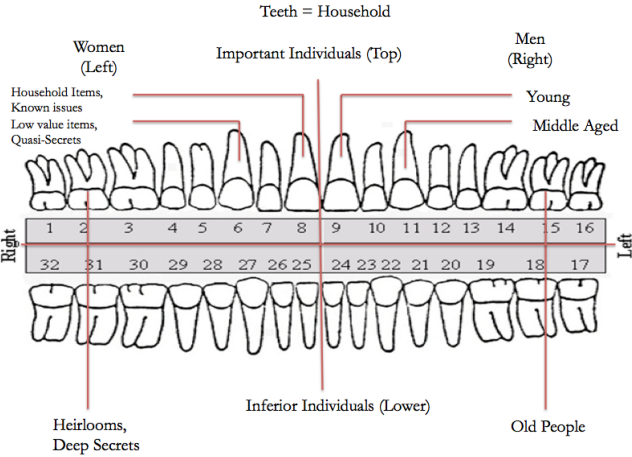
**Right Teeth:**  
Men

**Left Teeth:**  
Women

**Front Teeth:**  
Young persons, Household Goods, Known Issues

**Canines:**  
Middle aged persons, Low Worth Items, Quasi-Secrets

**Molars:**  
Older persons, Heirlooms, Secret Issues  
(Unmentionables)



Representation of the tooth loss interpretation guidelines of Artemidorus.  
Sarah Bond

Artemidorus, your mouth personified your household. As such, the top teeth indicated important persons, while the bottom were the inferior individuals.

Artemidorus' handbook codified a faith in the power of dreams, but it is also a product of his age. Rightfully, Daniel Harris-McCoy notes that the Ephesian lived in a period when “most people believed that numinous powers used a wide range of media, including dreams, to communicate with the world of men.” This fascination with the notion that the unknowable might be known, that the future might be revealed, is apparent in both the Greco-Roman world and the Near East. The ancient Semitic-speaking cultures of West Asia produced an immense literature of prediction. Various forms of divination figure prominently in ancient cuneiform tablets: astrology, extispicy, teratology, physiognomy, ecstatic prophecy, etc. While the cultures of Mesopotamia and Syria-Palestine did not leave behind the sort of second order reflection on divinatory practice that one finds, say, in Cicero's *On Divination*, primary accounts of divination abound.

In particular, from the second millennium onward we have evidence of a growing corpus of technical compendia from ancient Mesopotamia: celestial phenomena, monstrous births, the appearance of *exta* (entrails)—most especially of the liver—were recorded and correlated with predictive interpretations and arranged in massive, thematically organized lists. The “canonical” compendium of liver omens, *Bārûtu*, consisted of approximately 100 tablets in its Neo-Assyrian form. Extispicy held a place of privilege for inquiring of the future for much of Mesopotamian history, with astrology gaining in prominence during the first millennium BCE. The gods themselves wrote the future upon the very fabric of nature, there for the initiated to discern and interpret.

Amid this wealth of divinatory material, dream divination makes a frequent (if seldom celebrated) appearance. Already in Sumerian



literature, revelatory dreams appear in sources as disparate as inscriptions of Gudea, *ensi* of Lagash (22nd century BCE), and early epic material about the hero Gilgamesh. By the first millennium a highly developed compendium of dream omens, known as *Zaḳīqu*, circulated in the scribal schools of Mesopotamia. Like other types of omens, the composition is a series of conditionals, in this case listing possible elements of a dream. While much of the work is not extant, what we have recovered clearly indicates a thematic arrangement, much as we find in other omen compendia. Thus, a significant portion of tablet VII contains omens that have to do with dreaming about urinating:

If he washes his hands in his urine: he will eat little.

If he sprinkles (himself) with his urine: his sheepfold will expand.

If he sprinkles (himself) with his urine and wipes himself: (the disease called) “Hand-of-Ishtar”

If he directs his urine toward the sky: the son of this man, whom he will beget, will become important, (but) his own days will be short.

The Hebrew Bible (being, among other things, a carefully curated anthology of ancient Israelite literature) provides an interesting counterpoint on divinatory matters. Naturally, ecstatic prophecy receives pride of place within the biblical corpus as a means of divination. Not only does the canon contain fifteen books named for the prophets whose oracles they are said to contain, but chapter eighteen of Deuteronomy famously legislates divination, legitimating prophetic activity while condemning various other (several unclear) modes of divination. Numerous other texts attest to the cultural bias against forms of divination other than prophecy, even when—as in the case of necromancy in 1 Samuel 28—the biblical text clearly asserts that they work magnificently!

Dream divination occupies an interesting space in biblical discourses on predictive practices: it is neither explicitly endorsed nor is it condemned by legal texts. However, two Old Testament narratives prominently and positively feature dream interpretation as a means of communicating with the divine realm: the first is in the Joseph novella

In Mesopotamian omen series such as these, a dividing line scored across the width of the column typically separates such thematically arranged sections. Further Mesopotamian collections of dream oracles survive in addition to the canonical series.



Head of Gudea, King of Lagash (c.2120 BCE), from the Louvre. Wikimedia Commons, 2010

at the end of the book of Genesis, the second in the court tales that comprise the first half of the book of Daniel.

In Genesis, Joseph is sold into slavery by his brothers and finds himself rotting away in an Egyptian prison. In fact, the other sons of Jacob decide to turn on their brother in Genesis 37 after he relates to them two separate dreams predicting that they should ultimately bow down before him. In chapter 40, Joseph successfully interprets the dreams of two imprisoned Egyptian officials: the cupbearer’s dream means that three days hence he will be restored to Pharaoh’s favor; for the chief baker, the dream portends his hanging. Upon the fulfillment of these words, the restored cupbearer was so impressed that he did nothing for two whole years, until the day Pharaoh relates to him a dream that he cannot figure out. The cupbearer recalls Joseph’s amazing prognosticating skills

and refers Pharaoh to Joseph the dream interpreter. The rest, as they say, is history—or, at least, a really good story.

The other renowned dream interpreter of Hebrew scripture is Daniel, an exiled Judean living at the Babylonian court who emerges as the Chaldean seer and wiseman *par excellence*. His amazing skills are manifest already in chapter 2 of the book, wherein Daniel is not only able to interpret Nebuchadnezzar's dream and tell him what it means about the future, but he is able to tell Nebuchadnezzar the dream itself! Much as was the case with Joseph, Daniel's oneiromantic masterwork for a foreign king results in his immediate promotion to the highest stations of the royal palace.

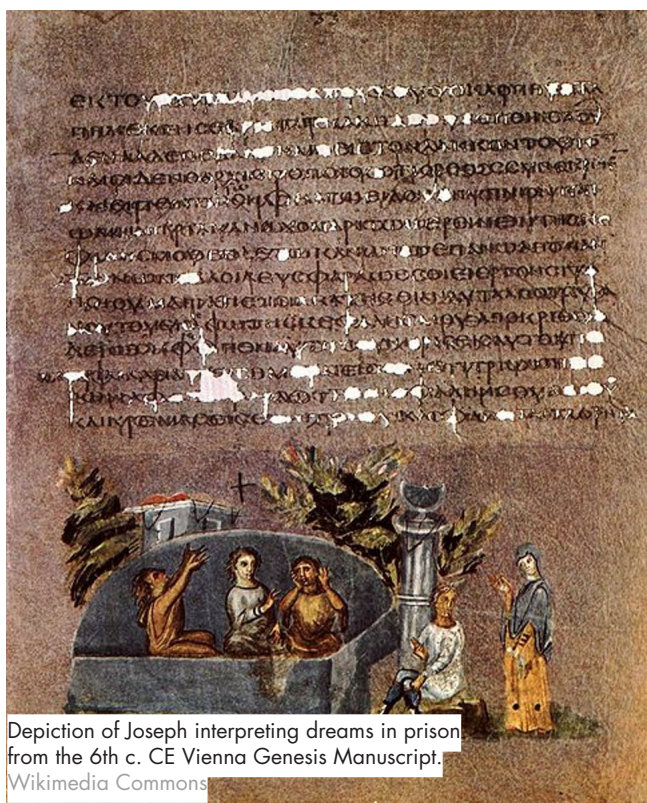
While one could question the significance of the fact that both Joseph and Daniel ply their predictive craft in explicitly foreign, non-Israelite contexts, the rabbis of early Judaism seemingly had little quarrel with divination by dream interpretation. Indeed, the Bible's privileged mode of divination, ecstatic prophecy, was determined by the rabbis of the Talmud to have definitively

ceased from the earth as of the late 6th or early 5th century BCE (b. *Sanhedrin* 111a). Tractate *Berakhot* of the Babylonian Talmud contains an extended rumination on dream interpretation (55b-56b). This section contains the famous rabbinic dictum attributed to Rabbi Hisda: "A dream which is not interpreted is like a letter which is not read." Contextually, the message seems to be that if one does not have a dream interpreted, it can do no harm; that is, the predictive aspect of a dream is only actualized at the time of interpretation.

This position was not shared by all rabbinic authorities; like much of the Talmud, this section dealing with dreams includes multiple positions. A lengthy story about a dream interpreter named Bar Hedyā indicates that he would simply offer favorable interpretations for those who paid, but negative ones for those who did not (b. *Berakhot* 56a). Despite the obvious critique of Bar Hedyā's practice, the interpretations that he offers to Raba (the title by which Abba ben Joseph bar Hama is known in the Talmud), who did not pay, constitute a series of fairly typical dream omens:

Subsequently Raba went to [Bar Hedyā] by himself and said to him: I dreamt that the outer door fell. He said to him: Your wife will die. He said to him: I dreamt that my front and back teeth fell out. He said to him: Your sons and your daughters will die. He said: I saw two pigeons flying. He replied: You will divorce two wives. He said to him: I saw two turnip-tops. He replied: You will receive two blows with a cudgel. On that day Raba went and sat all day in the Beth ha-Midrash. He found two blind men quarrelling with one another. Raba went to separate them and they gave him two blows. They wanted to give him another blow but he said, Enough! I saw in my dream only two.

Although Bar Hedyā is clearly portrayed as something of a charlatan for his different treatment of those who do and do not pay for his services, Raba nonetheless assumes the authenticity of his prognostications. As in Roman culture, those perceived to have the power of dream interpretation received plaudits and skepticism in equal measure.



Depiction of Joseph interpreting dreams in prison from the 6th c. CE Vienna Genesis Manuscript.

Wikimedia Commons

These practices of dream interpretation persisted for centuries in the societies of Late Antiquity and the Byzantine and early Islamic states. While epiphany dreams that predicted military victory and served to legitimize rulers continued to play a part in the political sphere (just think of the dream that Lactantius says Constantine had before the Battle of the Milvian Bridge in 312 CE).

Dream manuals intended for a more diverse audience also persisted. The dream manual of Artemidorus survived the early Middle Ages (not the easiest of feats), and was translated into Arabic during the ninth or tenth centuries. The text even helped to inspire the popular *Oneirocriticon* of Achmet, written in the tenth century.

How might we explain the persistent popularity of dream interpretation? The ubiquity of dream visions has always inspired some to try to map out their meanings—to render systematic something that is inherently unfathomable and unknowable. Above all, the ancient history of dream interpretation points to humanity’s insatiable hunger for the divine. For the ancients, every slumber held the promise of the numinous: a recurrent chance to peek into the abyss of the future and to know the will of the Gods—with a little help from mortal interpreters.



Exhausted Maenides after the Dance, Lawrence Alma-Tadema, 1884.  
Wikimedia Commons

#### Further Reading:

Daniel E. Harris-McCoy, *Artemidorus’ Oneirocritica: Text, Translation, and Commentary*. Oxford: Oxford University Press, 2012.

Juliette Harrisson, *Dreams and Dreaming in the Roman Empire: Cultural Memory and Imagination*. London; New York: Bloomsbury Academic, 2013.

Patrick Kragelund, “Dreams, Religion and Politics in Republican Rome,” *Historia: Zeitschrift für Alte Geschichte* 50.1 (2001): 53-95.

A. Leo Oppenheim, *The Interpretation of Dreams in the Ancient Near East. With a Translation of an Assyrian Dream-Book* = *Transactions of the American Philosophical Society* 46.3 (Philadelphia: American Philosophical Society), 1956.

Simon Price, “The Future of Dreams: From Freud to Artemidorus,” in *Studies in Ancient Greek and Roman Society*, ed. Robin Osborne (Cambridge: Cambridge University Press, 2004), 226-259.



Children's books envisioned what many could not: marriage and childbirth as a space colonist.  
Cox, *Stations in Space*, 1960



## The Case for Female Astronauts: Reproducing Americans in the Final Frontier

by Lisa Ruth Rand

It's bedtime in middle-class, white America, October 1962. Little Billy and Little Susie pick out books for story time. Billy wants Mommy to read his favorite, *Timothy's Space Book*. He loves to hear about rockets and engineers and the exciting future he'll have as an ambitious, tough-as-nails astronaut. But his older sister wants Mommy to read her favorite, *Space Flight: The Coming Exploration of the Universe*. Susie likes the pictures of satellites and space planes and sandwiches floating in micro-gravity. Her favorite part is when Mommy reads the section titled "Spacemen":

In the future, most boys will dream about going into space. The idea of being a spaceman will

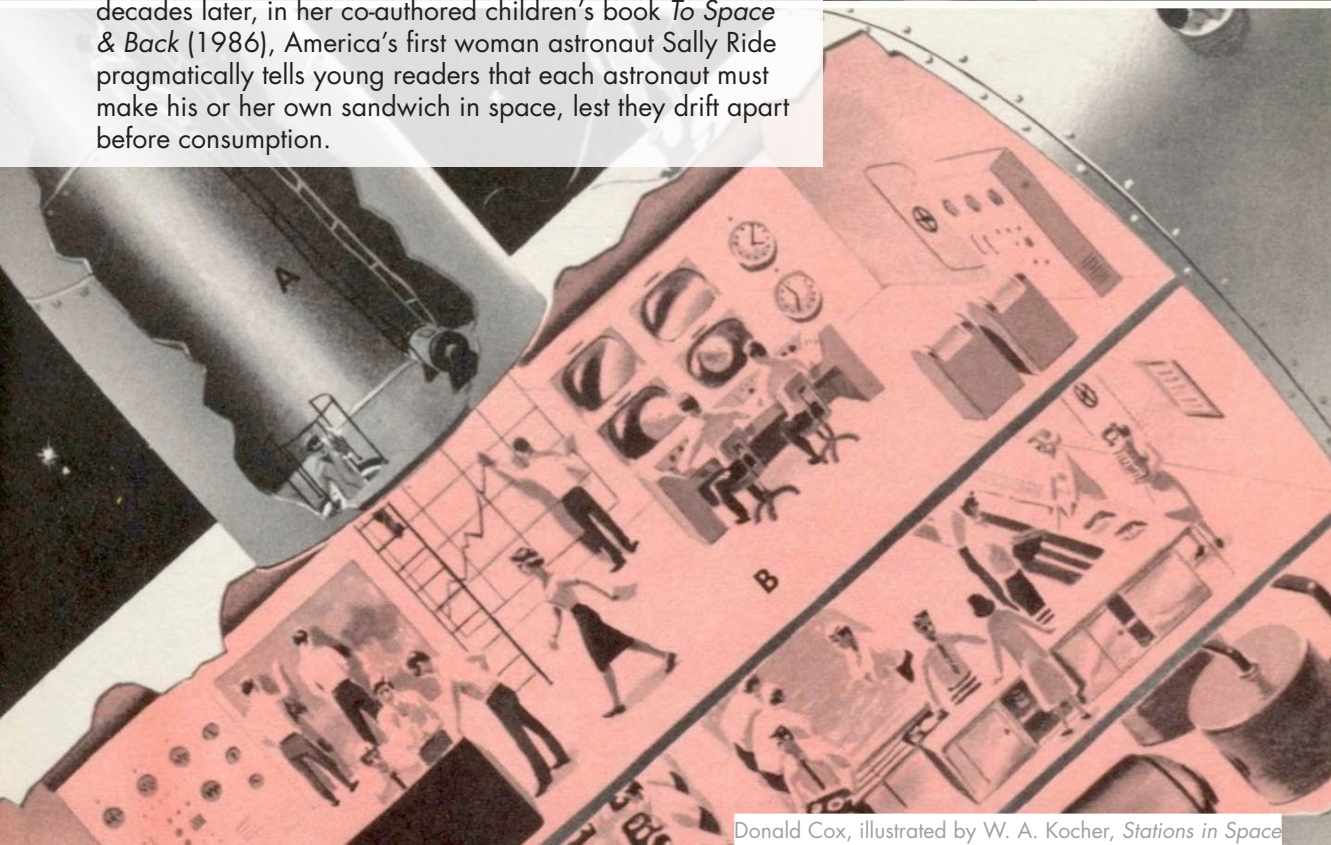
attract young people just as many now want to become airline pilots. Girls will also want to go out into the Space Service. They will probably do at least as well as men; for long and difficult trips, women may be preferred, since it has been proved that they are able to stand monotony better than men. Some girls may become pilots. The word *spacemen* must be used to mean either boys or girls, with no difference in the type of job they will do.

Susie drifts to sleep, imagining what kind of job she will do as a spaceman of the future. While this is the only one of the many children's space books in her family's library to mention girls and wom-





In outer space, spacemen and sandwiches alike float free (top). No ladies here—though perhaps it's presumed that they made the sandwiches, as illustrated in a 1960 conception of a future space station (bottom) in which three of four pictured female station inhabitants staff the cafeteria. Three decades later, in her co-authored children's book *To Space & Back* (1986), America's first woman astronaut Sally Ride pragmatically tells young readers that each astronaut must make his or her own sandwich in space, lest they drift apart before consumption.



Donald Cox, illustrated by W. A. Kocher, *Stations in Space* (New York: Holt, Rinehart and Winston, 1960)



en, she looks forward to living and working in a future of space stations, interplanetary travel, and cosmic colonies.<sup>1</sup>

Mommy slides *Space Flight* back onto the shelf and pulls out Billy's favorite Wild West storybook. Although the book in her hands portrays a nostalgic pioneer past that seems distant and alien in the modern 1960s, she feels a kinship with the bonneted, rugged women pictured. Her job seems remarkably similar to theirs, occasionally glimpsed in illustrations of wagon trails and homesteads from a century earlier. Next to valiant male explorers with their rifles and plows, pioneer women stand in doorways with a baby in arms, or trudge through prairie grasses with toddlers clinging to their skirts. When pictured at all, these women are evoked and defined solely by their reproductive labor.

It seems to Mommy that if a hundred years hadn't changed her own primary contribution to American society as wife and mother, perhaps Susie might be setting her sights impossibly high.

Colonizing and colonized women alike see similar representation in children's Wild West picture books of this time period. Unlike contrasting juxtapositions of the savage warrior or wary trader against the civilized and civilizing white man, representations of white, Indian, and Chicana women uniformly emphasize their fertility.



Even the rare 1950s and 1960s children's book that focuses on the "heroines" of the west represents women in the Western frontier as mothers first—or mothers only.

Nancy Wilson Ross, *Heroines of the Early West* (New York: Random House, 1960)

In the living room, Daddy reads the *New York Times*. In response to publicity surrounding formerly secret medical testing of women to determine their theoretical fitness for spaceflight—and a Congressional hearing weighing whether women should be considered for astronaut selection during or after the Mercury program—a physician-journalist concludes that women could be just as fit spacefarers as the celebrated male Mercury 7 astronauts. But a single, all-important question remains: Why? Why send women into space at all when qualified men already do the job well?

Daddy chuckles at the answer given in the article:

"It appears inevitable that women will eventually be space travelers. If man is to colonize the planets, if celestial housekeeping is ever to be instituted, the 'second sex' must have booking on future space flights. Unless the National Aeronautics and Space Administration has in mind some drastic sociological innovations, the story of outer space cannot discard the traditional boy-meets-girl plot."

The forward-thinking journalist imagines colonies in space, with humankind expanding its reach to the stars. However, even a medical doctor cannot imagine a future that separates women from their definitive biological identity as child-bearers—such a future seems so "drastic" as to be unimaginable—in 1962 and today.



The journalist's answer may be tongue-in-cheek, but it's also an accurate representation of standard reasoning regarding women's primary utility as astronauts across decades and genres of popular and political discourse. Without women to give birth to new generations of strong, intelligent, moral Americans in space, the final frontier would be as good as closed from the start.

The reproductive labor of American women as the fulfillment of their civic duties—known as Republican Motherhood—provides a thread of continuity between the Western American frontier and the imagined final frontier of outer space. During the early days of the American republic, a political



role for women evolved from the classical model of the Spartan Mother—a woman whose civic purpose drew from fashioning future soldiers to protect Sparta. The Republican Mother of eighteenth-century America could not vote, but she could raise responsible, civically engaged sons who would.

This idealized political role of women as Republican Mothers endured into nineteenth- and early-twentieth-century historical representations of the Anglo-American push into the Western frontier. Frederick Jackson Turner first publicized his Frontier Thesis at the end of the nineteenth century. In it, he claims that westward expansion played a major role in the formation of a twentieth-century American identity of rugged exceptionalism. While women are notably absent from Turner's thesis, subsequent revisions and elaborations of the Frontier Thesis portray frontier women as political actors by way of their power to reproduce, both physically and socially, a unique breed of American. The Cold War space race of the mid-to-late 20th century required a new kind of pioneer, but one that still expressed this frontier-forged American exceptionalism.

In building an American cultural identity in a real or imagined vacuum, the quiet but clear social and political role of American women as nurturers of the next generation of upstanding American citizens extended into this latest, ultimate frontier. In the late twentieth century, journalists, popular writers, scientists, legislators, astronauts—Americans of all stripes—projected into the final frontier of outer space the same nineteenth-century frontier mythology that valued women pioneers as little more than reproductive cargo on the westward wagon trails.<sup>2</sup>

Early space age culture in America highlighted women's reproductive capacity as a primary, crucial contribution that women could and inevitably would make to the space effort. At a broader glance, the concept of women as essential reproductive payloads on space voyages seems deeply at odds with the high-tech fantasies of those suggesting it. Futurists of the early space age could imagine the entire universe as potential human habitat—they envisioned the terraforming of Mars, enclosed biospheres on the Moon, and



Celestial housekeeping as envisioned in a 1968 advertisement for cleaning products. The space suit may be mod, the implied setting futuristic, but the assumptions about how straight, white, domestic women will perpetuate the species (and straight, white, domestic culture) onto other planets reflects longstanding ideas about the imagined role of female pioneers that persist today. Noxell Corporation, 1968





The political output of the frontier-going Republican Mother.  
Edith S. McCall, Illustrations by Carol Rogers, *Pioneering on the Plains* (Chicago: Children's Press, 1962)



Artist's conception, circa 1976, of a proposed space habitat known as the Stanford torus. Note the family-friendly recreation area in the foreground, with children playing under the watchful eye of a Space Mother. Featured in *Exploring Space*, a children's book published in 1979.  
NASA

space stations with artificial gravity. Whole new civilizations sprang forth from predicted technologies that pushed the limits of the known physical universe. However, the idea of removing childbirth from the human female body crossed a border between natural and unnatural that an agricultural space station did not. The limits of the broad-reaching extraterrestrial utopian imagination of mid-twentieth century America stopped at the biological boundary of human reproduction.<sup>3</sup>

Before we shake our heads blithely and chalk this up to 1960s chauvinism, keep in mind that the role of women as interplanetary breeding technology persists in current American scientific and popular culture. Biological studies of the challenges of human reproduction in space have been periodically published in the intervening decades, with one article by NASA researchers on the subject published as recently as 2010. As of April 2014, the Wikipedia page for "Women in Space" is roughly half composed of discussions of motherhood in space—whether it is possible to become a mother in outer space, special risks for astronauts who are also mothers, and studies of mammalian reproduction in space science research. Recent and current science fiction franchises that peddle in spectacular intergalactic futurism, including *Star Trek* and *Star Wars*, still bank on the reliable ratings draw of dramatic childbirth. We continue to imagine a future in the stars. We are capable of great flights of fancy that strain logic and credibility—except when it comes to imagining gestation and childbirth taking place outside the female body.

In her groundbreaking book *The Dialectic of Sex*, Marxist-feminist scholar Shulamith Firestone pinpoints a biological root of gender inequality across cultures. Childbirth, and all its attendant risks, labor, and anxieties, renders women reliant upon men for support, thus reinforcing power imbalances in the larger culture. Only when the physical act of childbirth, and the burden of providing humanity with its biological future, is removed from the female body will gender parity be-



come a reality. Arguably a technological utopian in her own right, Firestone in 1970 foresaw a not-too-distant day when reproductive technologies would free women from the shackles of childbirth, destroying the gender hierarchy once and for all.

Perhaps Firestone was too optimistic in her assessment that the technology to remove reproduction from women's bodies might be imminently available. Pregnancy and childbirth as the exclusive, almost mythical realm of the female body continue to occupy a sacred place in American culture. Where fanciful technological fixes to social and ecological problems from food supply to energy shortages merit political discussion, topics touching on technologies of childbirth rarely arise without inspiring intense, often polarizing debate.<sup>4</sup>

There's something irrefutably natural about the act of gestation and childbirth that renders it controversial to liberal and conservative alike. On one side are those that would agree with Firestone that childbirth oppresses women; then there are others that see great power in the act of childbirth—that even in the 21st century the physical act of becoming a mother imbues women with unique political power inaccessible to men. Harnessing technical rhetoric to describe the flip side of this power, some critics of partial, assisted reproductive technology such as surrogacy or in vitro fertilization have voiced fear that, should Firestone's vision come true, women will someday become obsolete like any other supplanted technology.

If women are no longer necessary to procreate, will there be a place for them in any imaginable future?



Cultural anxiety about the immutability of biological childbirth ran—and runs—so deep as to shape the broad scope of possible futures projected in the realm of fiction. Some of the most acclaimed twentieth-century popular American science fiction anticipates a dystopian future—with a major exception of the *Star Trek* franchise. Perhaps tellingly, iconic sci fi dystopian novels such as *Brave New World* and *Dune* feature future human societies that reproduce through technological means sep-

arated from the female body. Renowned science fiction luminaries from Isaac Asimov to George Lucas present artificial wombs as the pinnacle of futuristic inhumanity.

In the utopian interstellar future of *Star Trek*, by contrast, childbirth remains the exclusive domain of female human and humanoid members of Starfleet and the human-like species its members encounter. Female Starfleet members across all *Star Trek* series—and across inexplicably sexually compatible species—give birth in space. Even Captain Kathryn Janeway, the only female captain of a *Star Trek* series, cannot evade this unavoidable mark of her gender identity. *Star Trek: Deep Space Nine*, considered by some to be the *Trek* franchise with the most subversive, even queer politics, firmly situates childbirth as the exclusive domain of female bodies, even in scenarios where otherworldly, incomprehensible medical interventions allow fetuses to move from one body to another, or convergently evolved humanoid species to generate viable hybrid offspring together.

Even in the expansive world of fan fiction and slash erotica, where the rules of gender and the physical universe are sometimes even more pliable, the female gendering of childbirth endures as an

In *Star Trek: Deep Space Nine*, Major Kira Nerys, a non-human Bajoran female, gives birth to the child of two human parents, originally conceived and gestated by the human birth mother before an accident necessitates moving the fetus to the only available humanoid surrogate. The assisted reproductive technology of the utopian space future enables interspecies surrogacy and mid-pregnancy fetal transfer, but still requires a fleshy womb for successful human reproduction.

To watch the video, visit:

<http://appendic.es/m/1s>

Huxley's future society reproduces using harvested ovaries, sperm donors, and artificial wombs. Herbert's society uses "axolotl tanks" to gestate children. In the case of *Star Wars*, images of birth only show up in the so-called prequels, but they make a pretty clear statement regarding virtuous/natural versus evil/unnatural births: clones born from literal test tubes receive the same programming and treatment as robots, while a key natural birth produces the heroes of the original trilogy. Childbirth also kills the mother of these heroes, because a long time ago in a galaxy far far away they managed to figure out industrial cloning but not how to eliminate maternal mortality.



untouchable rule. In her analysis of *Star Trek* slash culture, cultural theorist Constance Penley looks at the practices and tastes of women peddlers of Kirk/Spock porn (also referred to as “K/S”). These writers and readers engage in subversive fantasies of futuristic, interspecies gay erotica in order to abandon the gendered inequality of the traditional “romance formula.” However, K/S pairings that result in one of the male pair having a baby never seem to gain traction or support among *Star Trek* slash aficionados. Overly complicated descriptions of convoluted technical rigs and participation by third and fourth parties render the process of a male pregnancy so awkward as to put off even to the most devoted slash practitioners. Most K/S fans find the suspension of disbelief required to imagine such profound rewriting of biological gender rules either impossible or unpalatable. Even in radical queer rewritings of utopian futures, the de- or re-gendering of childbirth crosses a line into the unthinkable.

One iconic space fantasy film of the 1960s represents a refusal of a future in which space women continue to be marked by their peculiar reproductive identities. While the sexy, campy *Barbarella* may not seem like a feminist political manifesto on its surface, the film does something very strange indeed: It imagines a spacefaring woman who is not only in control of her sexuality—but in control of a sexuality that is distinctly non-reproductive. Rather than serving as a means to expand the reach of humanity through producing more humans, intrepid astronaut *Barbarella* wields her sexuality as a tool of political exchange, and even one of pure, non-reproductive pleasure. This radical and dangerous concept in late 1960s America inspired protest and boycotts of the film by concerned conservative Americans. Like the women of ill repute in stories of the Wild West—women scorned largely for their ability to make a living outside the domestic sphere and exerting an economic power antithetical to Republican Mother-

In an iconic scene, *Barbarella* destroys the killer Excessive Machine using the power of her non-reproductive sexuality.

To watch the video, visit:  
<http://appendic.es/m/1t>

hood—*Barbarella* makes her way into the final frontier not as passive reproductive payload but as a political actor equal among men.<sup>5</sup>



Perhaps it was the *Barbarella*-like infertility and non-reproductive power of pilot and astronaut aspirant Geraldyn “Jerrie” Cobb that put her interlocutors at odds with her strident argument that she and other women be considered for spaceflight. In the early 1960s, she regularly spoke in defiance of high-ranking NASA administrators who publicly argued that training women astronauts would be a “waste” and a “luxury.” Cobb’s singleness, childlessness, and tendency to lapse into feminine faux pas such as kicking her shoes off under the table might not have resonated well with the ideal of the female spacefarer as Republican Mother for the space age lauded by supporters of a theoretical women-in-space program.

“Luxury” could also be interpreted as recreational luxury for male astronauts—as in one oft-cited joke repeated by the “Father of Rocket Science,” Wernher von Braun. In response to questions about whether women would fly in space, his response was that the spacecraft had been designed to allow “110 pounds for recreational equipment.”

Cobb had reason to believe that women would make excellent astronauts, even within the macho culture of the Cold War American space program. Starting in 1959, the medical clinic that tested Mercury astronaut candidates ran a group of women, beginning with Cobb, through the same qualification exams that the men underwent. While these exams were privately funded and did not represent any official move towards hiring women astronauts, the project came to public notice in 1962 when the U.S. House of Representatives held a hearing on the selection of astronauts, with the explicit goal of determining whether or not women had been intentionally excluded from consideration and deciding if women should be integrated within the ranks of the nation’s space pilots.

Over the course of the two-day hearing, the Special Subcommittee on the Selection of Astronauts of the Committee on Science and Astronautics heard from a range of space flight and aviation ex-

perts, starting with Jerrie Cobb. Cobb's testimony detailed the raft of tests she undertook, from two days in an isolation tank to swallowing radioactive water to pedaling a bike until exhaustion set in. She also noted that she and twelve fellow female test subjects had matched or even surpassed the results achieved by the male Mercury 7 astronauts, though she was careful not to suggest that her gender made her superior to the newly minted American heroes.

While the legislators in presence responded positively to Cobb, they spoke with extra deference to the next speaker—Jane Hart, a senator's wife and mother of eight children who also successfully passed the suite of Mercury medical tests. A model of Republican Motherhood, her potential as the perfect space colonist did not go unnoticed even in the austere setting of a Congressional hearing.

Mr. ANFUSO: Miss Cobb, that was an excellent statement. I think that we can safely say at this time that the whole purpose of space exploration is to some day colonize these other planets and I don't see how we can do that without women. [Laughter.]

Mrs. HART: I would like to say, I couldn't help but notice that you call upon me immediately after you referred to colonizing space.

Mr. ANFUSO: That is why I did it. [Laughter.]

Representative James Fulton, the most outspoken member of the committee in support of Cobb and Hart, invoked the names of legendary pioneering women in arguing for including women in the American space effort. From Queen Isabella to Sacagawea, Fulton argued that women provided greater services than his colleagues would acknowledge—women generated capital, performed essential labor, and displayed quick thinking in frontiers across history, concluding that “ladies can be courageous for various reasons in space.”

Damning counterevidence came in the form of testimony by the funder of the women's medical exams. Jacqueline Cochran was a famous aviator of her time. Wealthy, accomplished, and sharp as any pioneer woman invoked by Fulton, by the end



Jerrie Cobb poses next to a Mercury spacecraft in this undated photo. Nearly four decades later, supporters would campaign for her to become an astronaut prior to John Glenn's historic return to space aboard the Space Shuttle in 1998, arguing that experiments on space geriatrics should include women, who make up the majority of the elderly in America. The campaign did not succeed.

NASA

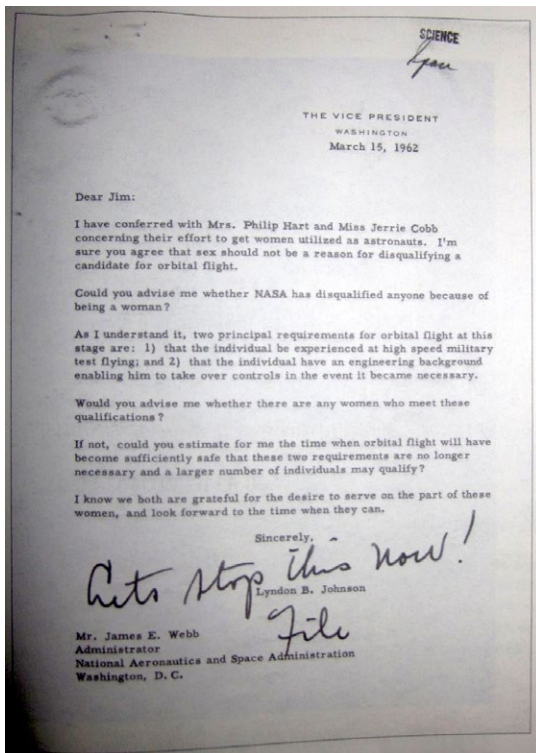
of her life she held the greatest number of flight records by anyone, man or woman. She organized the Women's Air Service Pilot (WASP) initiative during World War II. She was a personal friend of Chuck Yeager and Dwight Eisenhower. Cochran believed that while women might be physically and psychologically fit for space flight, their primary dedication to domestic roles as wives and mothers made them a poor investment by the cash- and time-strapped space program. She tes-

It is perhaps notable to remark that Jacqueline Cochran was herself childless. While she argued that women would inevitably give up career for motherhood, Cochran fashioned herself as an exception to this rule—as an “honorary man” not only as a singularity of her gender but also in her (willing or unwilling) rejection of that which made other female pilots women first and pilots second.

tified as such to the assembled committee, to the shock and consternation of Cobb and Hart.

Cochran's testimony was followed the next day by that of John Glenn and Scott Carpenter, two recently returned astronaut heroes who expressed clear opinions on whether or not to change existing astronaut selection guidelines to allow more women to be eligible. John Glenn particularly noted his belief that passing the medical exam did not make the women test subjects "automatically astronauts," stating:

It just shows that they are a good healthy person. These [exams] are such a minimum thing...A real crude analogy might be... My mother could probably pass the physical exam that they give preseason for the Redskins, but I doubt if she could play too many games for them.



Written four months before the Congressional hearing on astronaut selection, a letter to NASA Administrator James Webb drafted by Lyndon B. Johnson's secretary on the topic of investigating a possible program for women in space gets filed away, unsent, with telling marginalia in the Vice President's hand. Cobb and Hart faced an uphill battle from the start.

NASA History Office

Glenn invoked his own mother as proof of the absurdity of allowing a group of exceptional women to join an elite club, rendering them wholly unexceptional by association. The banality of motherhood presented by Glenn combined with the indisputable prioritizing of motherhood at the expense of flying professions presented by Cochran did not help Cobb and Hart's case. Instead it lent a contradictory valence to the debate about women's fitness and utility for spaceflight. Women's reproductive capacity constituted both an accepted eventual necessity for their inclusion as spacefarers, but also the main obstacle to their immediate employment as astronauts. So long as childbirth took place *after* a future point of extraterrestrial colonization, women could become welcome, contributing members of spacefaring society. Their fertility both limited and necessitated their participation in a spacefaring American future.<sup>6</sup>

After the hearing, which was cut short by a day following the astronauts' celebrity appearances, the matter seemed closed. Meager attempts to jumpstart a woman in space initiative met lukewarm to downright hostile response among the ranks of the federal government. The first woman in space would be a Soviet, Valentina Tereshkova, who orbited the planet a year later. It would take another 20 years until an American woman would follow in her footsteps, and another fifteen years after that until the first American woman would command a space mission.

That first woman spaceflight commander, Eileen Collins, credits science fiction for expanding her ideas of what human futures in space could look like. Perhaps our fictional Little Susie also turned to *Star Trek* to find a place for herself in the cosmos, even as its radical representations of women across race, class, and creed as fictional or real spacefarers retained gendered marks of fertility and reproductivity.

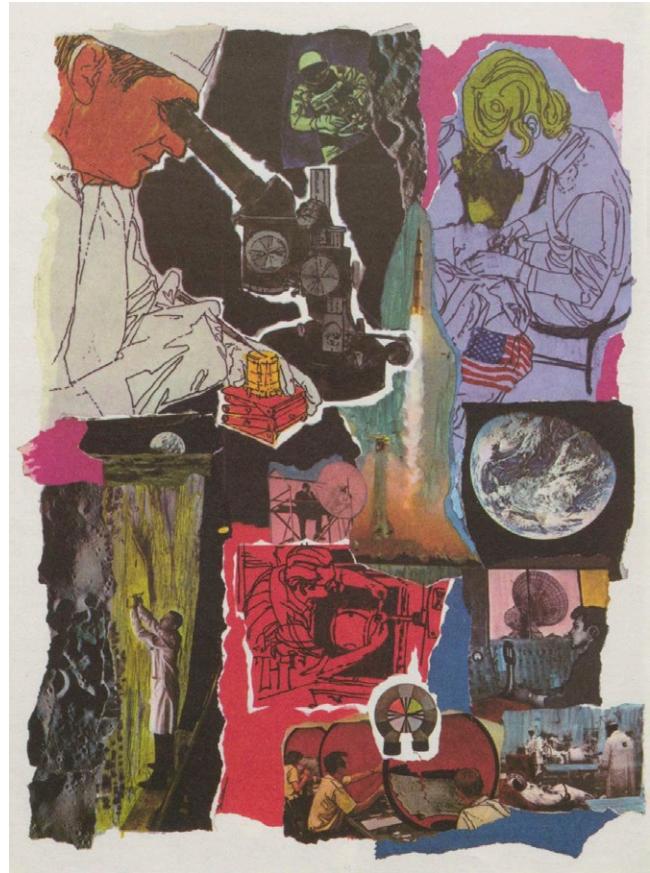
It may take Susie growing up into Susan, getting radicalized by reading Simone de Beauvoir, and joining a consciousness-raising group to realize that even in her beloved childhood picture books, the only women pictured engaged in space labor are answering phones, serving food, and sewing spacesuits, feet firmly planted on the ground. In



the 1980s she will have Sally Ride and Shannon Lucid to look to for inspiration, real women who flew in space in spite of, not because of, their ability to give birth—even as the popular press attempted to highlight that ability above all others. In the 1990s she will have fictional Captain Jane-way and Major Kira Nerys, who participate fully in galactic politics even as they give birth in alien places under strange and fantastic circumstances. In the 2010s, Susan will see a new group of astronaut candidates, the first cohort in history to be made up of an equal number of men and women. She will also notice that the vastly lower total number of women astronauts boast higher levels of education and qualifications compared to the men that make up the significant majority of the astronaut corps.<sup>7</sup>

A new millennium of self-perpetuating human colonies on Mars imagined by 1960s space-age futurists has not yet come to pass, nor has the alternative radical feminist fantasy of gender equity through artificial reproductive technology. Astronauts of all genders continue to be transient visitors, not permanent residents, of outer space. Pregnancy in space remains “contraindicated” in deference to the unknowns of what a microgravity and high radiation environment might do to fetal development. The intergalactic futurism of the Cold War space race has mellowed into legislative debates over whether the Moon, Mars, or an asteroid should host our next celestial visit, with no serious proposals of imminent extraterrestrial human civilizations. The latest projections of the next era of American human spaceflight reflect more pragmatism and ambivalence than the sweeping cosmic visions of the 50s and 60s.

For better or worse, these futures may be less immediately contingent on physically sustaining the frontier narrative into the universe. Will today’s Little Susies be able to imagine a future in space liberated from their procreative responsibilities? Will the astronauts of the next centuries be Jerrie Cobbs, Barbarellas, or Kira Neryses? Or will even visions of grand future civilizations in space continue to be confined within the wombs of the next generation of long-suffering frontierswomen?



Men and woman (singular) at work in the space industry, as imagined in 1969.

Leroi Smith, ed. *We Came in Peace*.  
(San Rafael, Calif., Classic Press, 1969)



A 1973 children’s book stars a young girl of color who makes her dream of spaceflight a reality through ingenuity, imagination, and a little gaming of the very system that would exclude her—the heroine builds her own spaceship out of salvaged junk, and travels solo under no expectations but her own. Here’s hoping Susan picked up a copy of this exceptional book for her daughter.

Linda C. Cain and Susan Rosenbaum. *Blast Off!*  
(Lexington, Mass.: Ginn, 1973)

## Notes

1. On surveying American juvenile literature titles filed under astronautics and space flight published between 1955 and 1979 held at the Library of Congress, only two include references to women working in the spaceflight industry—mostly as support staff, or pointing to Nancy Roman (chief of space astronomy during her 20-year career at NASA) as proof to American girls that their presence in the space program was actively desired. The only images of women space workers include women answering phones, serving food, and sewing space suits, a more accurate portrayal of women's actual and imagined professional role in the early American space program.

2. Feminist historians and theorists have challenged the Frontier Thesis put forth by Frederick Jackson Turner as obscuring the roles of women and people of color in the forging of a particular American political spirit in the American West. For more on the Frontier Thesis and its impact on subsequent invocations of the frontier in American society, see White, Limerick, and Grossman. For the Enlightenment philosophical roots of Republican Motherhood, see Linda Kerber. For a sample of feminist recuperation of women's roles in the Western frontier beyond childbearing, see Margaret Walsh.

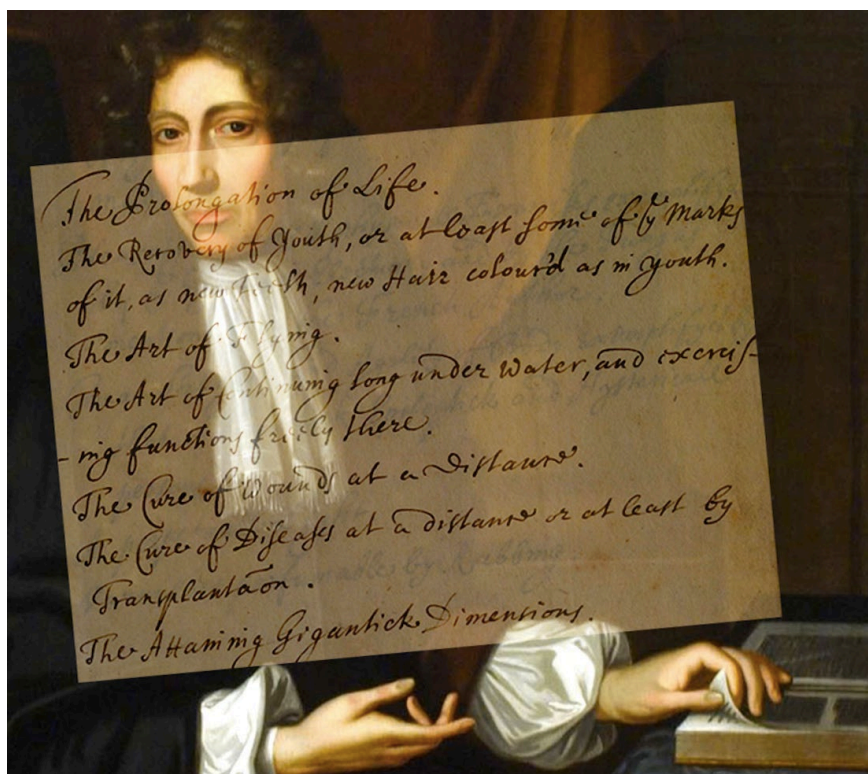
3. The concept of *terra nullius*, or “empty land,” has long served as justification for the colonizing of supposedly unused or under-used lands—and the oppression of the seen or unseen occupants of those lands. How might *terra nullius* apply in the terraforming of Mars, say, or the construction of an orbiting space station?

4. In the first chapter of *The Dialectic of Sex*, Firestone notes that: “Though man is increasingly capable of freeing himself from the biological conditions that created his tyranny over women and children, he has little reason to want to give this tyranny up.” (*Dialectic of Sex*, p. 10) So perhaps “optimistic” is the wrong term to apply to Firestone's belief that the technology will exist—particularly given her pessimism regarding the dominant gender's willingness to take it up on behalf of the oppressed.

5. For a scholarly analysis of the ways in which *Barbarella* represents 1960s anxiety about female sexual agency, the Cold War, and humankind's future in space, as well as critical and popular response to *Barbarella* in American culture, see Lisa Parks, “Bringing *Barbarella* Down to Earth” in *Swinging Single*.

6. Glenn's mother, presumably infertile due to age, would be that much more absurd a choice for a hypothetical astronaut—incapable as she would be of furthering mankind's reproductive destiny into the cosmos. However, science fiction writer Ursula K. Le Guin would likely think her the ideal candidate for space diplomat, benefited by her infertility. See Ursula K. Le Guin, “The Space Crone.” In *Dancing at the Edge of the World: Thoughts on Words, Women, Places* (New York: Grove Press, 1989).

7. Today, women astronaut hopefuls are also disqualified more regularly due to a lower threshold for radiation exposure than is set for men. The radiation protection rule was often invoked for paternalistic reasons in the early days of the American space program—if a woman loses her ability to give birth due to radiation poisoning, she would lose her entire sense of self and identity as a person. Today the uneven threshold is supported by reported higher incidence of cancer due to radiation exposure in women, largely based on studies from Hiroshima and Nagasaki after the atomic bombs. At least one study suggests that perhaps biomarkers might help cull out the more radiation-resistant to be our star seeders—a new interplanetary eugenics. See <http://www.space.com/22252-women-astronauts-radiation-risk.html>, and “Radiation Hazards and the Colonization of Mars,” *Journal of Cosmology* (2010).



Robert Boyle's remarkable to-do list for future scientists ranged from "the Art of Flying" to "Potent Druggs to alter or Exalt Imagination."

## Perchance to Dream: Science and the Future

by Anna Marie Roos

Robert Boyle, the seventeenth-century polymath, chemist, and fellow of the Royal Society, left in his papers a twenty-four-item list of predictions of the future. Though he discovered the famous law of gaseous pressure and volume that bears his name, Boyle was not just blowing hot air. The Royal Society was the first government-sponsored scientific society in the world. As part of a charter granted by King Charles II, the Society charged itself, in that delightfully immodest manner characteristic of the Restoration, to "extend not only the boundaries of the Empire, but also the very arts and sciences."

So, the list Boyle left us was all about boundary breaking, and a successful list it was. Many of the items, such as "the art of flying," "the art of continuing long under water, and exercising functions freely there," and even "Varnishes perfumable by Rubbing" have been achieved in the form of airplanes, scuba diving, and scratch-and-sniff. A designer even recently created minty scratch-and-sniff jeans, the smell lasting through ten washes.



## Boyle's "Desiderata," transcribed:

- The Prolongation of Life.
- The Recovery of Youth, or at least some of the Marks of it, as new Teeth, new Hair colour'd as in youth.
- The Art of Flying.
- The Art of Continuing long under water, and exercising functions freely there.
- The Cure of Wounds at a Distance.
- The Cure of Diseases at a distance or at least by Transplantation.
- The Attaining Gigantick Dimensions.
- The Emulating of Fish without Engines by Custome and Education only.
- The Acceleration of the Production of things out of Seed.
- The Transmutation of Metalls.
- The making of Glass Malleable.
- The Transmutation of Species in Mineralls, Animals, and Vegetables.
- The Liquid Alkaest and Other dissolving Menstruums.
- The making of Parabolicall and Hyperbolical Glasses.
- The making Armor light and extremely hard.
- The practicable and certain way of finding Longitudes.
- The use of Pendulums at Sea and in Journeys, and the Application of it to watches.
- Potent Druggs to alter or Exalt Imagination, Waking, Memory, and other functions, and appease pain, procure innocent sleep, harmless dreams, etc.
- A Ship to saile with All Winds, and A Ship not to be Sunk.
- Freedom from Necessity of much Sleeping exemplify'd by the Operations of Tea and what happens in Mad-Men.
- Pleasing Dreams and physcally Exercises exemplify'd by the Egyptian Electuary and by the Fungus mentioned by the French Author.
- Great Strength and Agility of Body exemplify'd by that of Frantick Epileptick and Hysterical persons.
- A perpetuall Light.
- Varnishes perfumable by Rubbing.

*The Prolongation of Life.*  
*The Recovery of Youth, or at least some of the Marks of it, as new Teeth, new Hair colour'd as in youth.*  
*The Art of Flying.*  
*The Art of Continuing long under water, and exercising functions freely there.*  
*The Cure of Wounds at a Distance.*  
*The Cure of Diseases at a distance or at least by Transplantation.*  
*The Attaining Gigantick Dimensions.*  
*The Emulating of Fish without Engines by Custome & Education only.*  
*The Acceleration of the Production of things out of Seed.*  
*The Transmutation of Metalls.*  
*The making of Glass Malleable.* (Vegetable)  
*The Transmutation of Species in Mineralls, Animals, & Vegetables.*  
*The Liquid Alkaest and Other dissolving Menstruums.*  
*The making of Parabolical and Hyperbolical Glasses.*  
*The making Armor light and extremely hard.*  
*The practicable & certain way of finding Longitudes.*  
*The use of Pendulums at Sea and in Journeys, and the Application of it to watches.*  
*Potent Druggs to alter or Exalt Imagination, Waking, Memory, and other functions, and appease pain, procure innocent sleep, harmless dreams etc.*

Boyle Papers 8, fol. 208, The Royal Society

*A Ship to saile w<sup>th</sup> All Winds, and A Ship not to be Sunk.*  
*Freedom from Necessity of much Sleeping exemplify'd by the Operations of Tea and what happens in Mad-men.*  
*Pleasing Dreams & physcally Exercises exemplify'd by the Egyptian Electuary and by the Fungus mentioned by the French Author.*  
*Great Strength and Agility of Body exemplify'd by that of Frantick Epileptick and Hysterical persons.*  
*A perpetuall Light.*  
*Varnishes perfumable by Rubbing.*

Boyle Papers 8, fols. 209, The Royal Society

Boyle's list reminds us that science has always been bound together with novelty and entertainment. The early Royal Society's meetings were in fact characterized as "entertainments" for wealthy and interested gentlemen, and Boyle himself demonstrated a trick of writing with a finger dipped into luminescent phosphorus, the "icy noctiluca" as he termed it, making enchanting displays.

These wish lists of future predictions derived in part from the natural philosophical projects of Francis Bacon (1561-1626), whose scientific method of empirical observation and induction were revered by the Royal Society. As the historian Vera Keller has demonstrated, invention—whether ancient, modern, or not-yet-discovered—was a major preoccupation of early modern thinkers. Bacon, in particular, formulated the idea of the *desiderata* or wish list, or inventions that were seen as particularly desirable. Keller writes that these lists served as "markers for what humankind might achieve together... serving to expand the horizon of possibility." Some of his motivation for making such lists was purely political, economic and practical, as Bacon called them, "experiments of fruit," whereas other investigations were to advance knowledge, or for "experiments of light." Wish lists appeared as part of political projects before they appeared as scientific projects; *desiderata* about improvements in navigation, for example, were written with the aim of extending England's empire.

By surpassing the bounds of empire, nature, and knowledge via experimentation, Bacon argued that humankind could restore itself to its perfect pre-lapsarian state before the fall in the Garden of Eden. Humans could use knowledge of the natural world to have dominion over nature, not just for material benefit but also for charitable purposes, to improve "man's estate." Because of this important aim, Bacon also argued that it was a crucial job of the historian to keep old technologies from being lost to the mists of time, as well as to open up new lines of future enquiry.

As an historian of science, I thought I'd follow Bacon's advice about listing and writing about past and future inventions. I decided to see what the contemporary Royal Society thought about its visions for the future. My first point of call was

the Society's blog of advice to science policy makers. Much of the advice is dedicated to inventing technologies not only to control nature as Bacon advised, but also to mitigate the effects of human intervention on the planet. Reducing sources or enhancing the sinks of greenhouse gases, promoting sustainable development, and using science to reduce the impact of natural disasters are common themes, but so is geo-engineering, or as the blog describes, a "suite of techniques to reduce global warming by intervening in the Earth's climate system. It can involve removing carbon dioxide from the atmosphere, or reflecting a small proportion of sunlight back into space." Bacon himself in *The New Atlantis* envisioned a mysterious island nation whose citizens had "great and spacious houses, where we imitate and demonstrate meteors—as snow, hail, rain, some artificial rains of bodies and not of water, thunders, lightnings." Scientists have always dreamed of controlling the weather.

The Society's blog is entitled *In Verba*, a rather geeky pun on its motto *Nullius in verba* (Take nobody's word for it, find out for yourself). I therefore decided to ask a few Fellows of the Royal Society this question: If you were making a 21st century wish list of scientific discoveries or future innovations, what would you include?

Here are my results.



I'd like someone to solve one of the greatest mysteries of sexual selection—why the females of most species are promiscuous.

I would also like to wish for fewer restrictions on research funding; less bureaucracy; more blue skies research; more honesty in publishing; and the greater representation of women in science.

—Professor Tim R. Birkhead, FRS, University of Sheffield. Ornithologist and best-selling author who specializes in the mechanism of sexual selection in birds.



Diagnostic kit with behavioral/neurological measures for neuro-developmental disorders such as autism, dyslexia and dyspraxia.

Knowing the reasons why their child is not developing in the normal way would prevent a lot of misery and unnecessary self-blame for affected families. Educational interventions could be put in place early before the failure to meet unrealistic expectations becomes a deeply frustrating everyday experience.

Personalized education based on individual preferences and abilities.

The processes underlying learning, attention and motivation need to be fully understood so that they can be used to design educational programmes for everybody, and at any age to adapt to a continuously changing cultural environment.

—Professor Uta Frith, DBE FBA FRS FMedSci, University College London. Psychologist. Professor Uta Frith is best known for her research on autism spectrum disorders, and is one of the initiators of the study of Asperger's Syndrome in the UK. Her work on reading development, spelling and dyslexia has been highly influential.



To understand how and why the brain generates sleep.

We spend approximately 36% of our lives asleep. This makes sleep the single most important behaviour we experience yet as individuals and as a society we disregard it. We already know that sleep is not the simple suspension of activity but a state that is associated with critical brain functions such as memory consolidation and information processing, whilst in the rest of the body tissue repair, toxin clearance and the rebuilding of energy reserves all occur during sleep. We also know that disrupted sleep is associated with multiple health problems including cognitive impairment, impulsive behaviour, mental illness, metabolic abnormalities including diabetes II, immune suppression, increased risk of cancer, cardiovascular problems and ultimately death. Our waking experience and health depends upon “good sleep”, but what is good sleep; how

does the brain generate sleep; why is our health so dependent upon sleep; and could we develop drugs to fully mimic sleep?

This wish is fairly similar to Boyle's: “Potent Druggs to alter or Exalt Imagination, Waking, Memory, and other functions, and appease pain, procure innocent sleep, harmless dreams, etc”

—Professor Russell G. Foster, FRS FMedSci, Head, Nuffield Laboratory of Ophthalmology. Director, Sleep and Circadian Neuroscience Institute Fellow, Brasenose College, University of Oxford. His research interests span both visual and circadian neurobiology with the main focus on the mechanisms whereby light regulates vertebrate circadian rhythms.



Designing molecules to produce particular effects.

—Professor Martyn Poliakoff, CBE FRS, is the Foreign Secretary and Vice-president of the Royal Society. He is also a green chemist, working on gaining insights into fundamental chemistry and on developing environmentally acceptable chemical processes and materials.





The evolution of multi-cellular life on land was a major event in Earth history. I would like us to be able to link genetics to geochemistry to understand how plants left the water and established complex terrestrial ecosystems on the dry continental surfaces approximately 500 million years ago.

I would also like us to discover if there is extraterrestrial life and find out how similar or different it is to life on Earth. This knowledge could be of great benefit to avoid human extinction.

—Professor Liam Dolan, FRS, is the Sherardian Professor of Botany, University of Oxford. His research is aimed at understanding general principles of cell development and evolution using specialized rooting cells such as rhizoids and root hairs as models. In particular, he is interested in the role of root hairs in enhancing nutrient uptake in crops.



To discover some early fossil land plants and to find the technology that would allow identification of their affinities.

—Professor Dianne Edwards, CBE ScD FRSE FLSW FRS, is a Distinguished Research Professor at Cardiff University. A paleobotanist, Professor Edwards is distinguished for her investigations into the nature of the earliest land plant fossils. By skillful application of scanning electron microscopy, and the painstaking use of such techniques as the preparation of polished surfaces of pyritised plant tissue, she has elucidated the anatomy and morphology of numerous late Silurian and early Devonian plants and thrown new light on the evolutionary events surrounding the first colonization of the land. Professor Edwards is President of the Linnean Society of London.



I would like to thank the Fellows of the Royal Society, Jo McManus, and Mr. Keith Moore, Head of Library and Information Services at the Royal Society, for their assistance with this article.



# Honey, You're Scaring the Kids

by Rebecca Onion

In the fall of 1983, a TV movie ruined Alexander Zaitchik's ninth birthday party. He wasn't supposed to see *The Day After*, a two-hour film set in Lawrence, Kansas that follows a cast of everyday American characters into and through a nuclear strike, but he lingered at the top of the stairs as his family watched, catching snatches of the images and sounds.

Recalling the event years later, Zaitchik remembered his eight-year-old self anxiously playing through the circumstances of a nuclear attack:

If it happens in the afternoon, do we run toward home, or away from the city and the blast? If it happens at night, do we let our parents huddle over us in the basement, or do we stand on the

rooftop, chests forward, praying the first shock wave dematerializes our family without pain?

Preoccupied, Zaitchik wrote, he barely noticed his birthday celebration. "It was the first birthday party I felt no excitement over. The ice cream cake was tasteless. The *Return of the Jedi* action figures I unwrapped were pieces of plastic, destined to burn up with everything else."

Zaitchik's memories of November, 1983 have the special hyperbolic flavor of juxtaposition: the sweet cultural hallmarks of an 80s childhood, ice cream cake and *Return of the Jedi*, mashed up with the darkness of nightmares. He's not the only 80s child with strong memories of this movie. Anecdotal evidence of its impact abounds. Writer Ste-



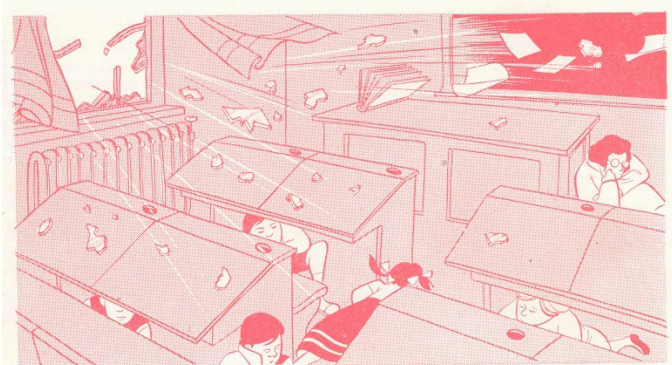
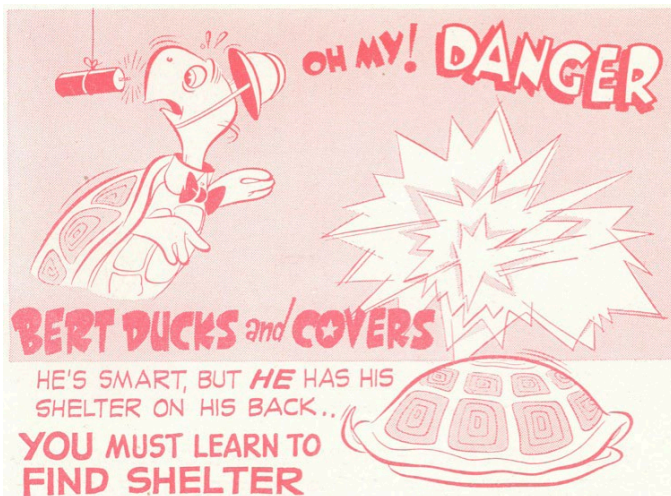
ven Church's 2010 memoir *The Day After The Day After: My Atomic Angst* uses the broadcast as an anchoring point to explore all of the anxieties of childhood. The director of the film, Nicholas Meyer, still receives correspondence from kid viewers, now grown up, who were deeply affected.

The broadcast and its attendant hype has become a touchstone in any academic history of American film and television in the nuclear age. An estimated 100 million people watched *The Day After*. The broadcast came along with intense media coverage, government commentary, and psychological advice.

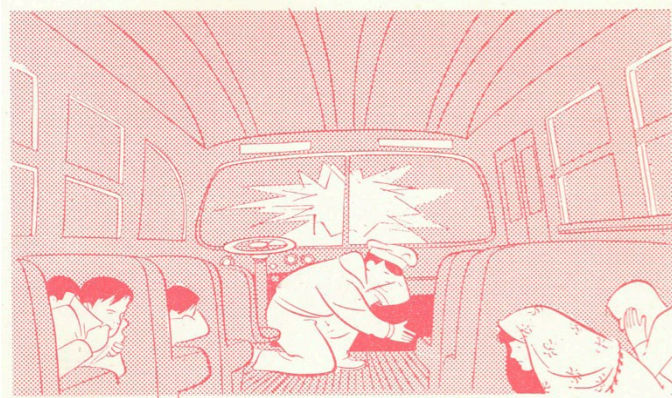
Discussions of the movie's impact revealed sharp lines between conservative voices who preferred to steer clear of what they termed emotional reactions (or, as William F. Buckley, Jr. would put it, "junk thought") in policy discussions, and activists who found a bloodless conversation about the issues to be dangerous and inhuman. In this conversation around the emotions that the movie might provoke, the motif of younger children's fears, and older children's cynicism, emerged again and again.

This was something new to the 1980s. While political discourse early in the Cold War invoked childhood, it did so to strengthen nationalist consensus, as anthropologist Sharon Stephens has argued. A finger pointed to the family's needs justified containment culture. Child psychologists of the early Cold War did worry about kids' thoughts about the bomb, with groups like the Committee for the Study of War Tensions in Children analyzing possible effects of constant public nuclear talk on kids' psyches. But the concern didn't translate to political action.

Kid fears of the 1950s were met with what now looks like condescending, palliative civil-defense culture. Cartoons that are now the object of our historical scorn (*Duck and Cover* primary among them) explained the possible consequences of nuclear war, recommended putting your head under a picnic blanket



**BUT SOMETIMES--AND THIS IS VERY IMPORTANT--**  
THE BOMB MIGHT EXPLODE AND THE BRIGHT FLASH  
COME... WITHOUT ANY WARNING!



**BUT REMEMBER... DO IT INSTANTLY...**  
**DON'T STAND AND LOOK. DUCK AND COVER!**

From 1951 comic-book version of "Bert the Turtle," published by the US Federal Civil Defense Administration and Archer Productions.  
Government Comics Collection



if the bomb were to come while you were in the park, and compared radiation burns to sunburn.

I'm not going to argue that no children were afraid of nuclear war before the early 1980s. Indeed, historian Spencer Weart, in his book about nuclear fear, remembers sitting in front of the television in April, 1954, watching the filmed Operation Ivy test of a hydrogen bomb in "dread fascination." Rather, it was the public acknowledgement and politicization of children's fears that was something remarkable and new.



In the thirty-year gap between *Duck and Cover* and *The Day After*, children's nuclear fears came to be seen as admonishments. In a pre-*Day After* column, the *Washington Post*'s Ellen Goodman argued that the difference between her generation's experience and the present day's was in leadership. "Most of us have grown up under the threat of extinction," she wrote. "In the past we behaved much like children who entrust their anxieties to powerful adults in the belief that responsible grown-ups will take care of them. We entrusted nuclear anxiety to our leaders." Adults and children alike had become afraid, she wrote, because those in charge were clearly "not careful enough."

Writing about fear and childhood between 1850 and 1950, historians Peter Stearns and Timothy Haggerty point to a transition in expectations when it comes to parental duties to prevent and allay kids' fears. Victorian parents, they argue, were counseled to see fear as a productive obstacle, and to help children move past anxiety into adulthood. Kid fears didn't receive much credence.

Unlike the boogeyman,  
nuclear annihilation was  
real, and adults made it.

Around the turn of the century, advice to parents began to recognize specific fears as endemic to childhood: animals, the dark. "Fear and its management became far more problematic than they had been in nineteenth-century culture," Stearns and Haggerty write. "Avoiding fear began to make much more sense to many prescribers than accepting its challenge as part of building moral character."

The nuclear kid fears of the early 1980s were not just personal and domestic. They were public fears, writ small. In the discourse over nuclear fear, dismay over the distress of children became wrapped up with the guilt that a parent must feel at a child's affliction, and amplified by the parent's own apprehensions. Unlike the boogeyman, nuclear annihilation was real, and adults made it.

Contemporary analysts studied fears as a barometer of underlying social trauma. Ethicist Roger L. Shinn, writing about public awareness of nuclear threat in the *Bulletin of the Atomic Scientists*, saw children as the true indicator of whether or not the public was even thinking about nuclear war: "There are some signs that the public seems largely unaware of the issue," he wrote in 1984. "But other signs, sometimes in the inadvertent remarks of children, reveal a deep awareness that we live in a fragile civilization that could go up in a mushroom cloud."

When *The Day After* was broadcast, things looked dark. In its first term, the Reagan administration took little action on arms control, and sometimes appeared openly hostile to the issue, preferring to invest in an enhanced arsenal and to plan for blue-sky defense systems. As historian Lawrence Badash points out, in the early 80s anti-nuclear activists shifted focus from nuclear power to disarmament: "Half of the American organizations that focused on peace, disarmament, defense, nuclear war, and weapons were founded during Reagan's first term." The 1982 publication of Jonathan Schell's book *The Fate of the Earth* galvanized the anti-nuclear movement still further with its dire warnings of the consequences of nuclear bombs. In the fall of 1983, Carl Sagan had just published an article in *Parade Magazine* on the possible long-term effects of nuclear winter. And the USSR and NATO had escalated their nuclear presences in

Europe, with NATO placing Pershing and cruise missiles on European soil.

In this context, *The Day After* seemed poised to catalyze simmering anxieties. Critic Tom Shales, writing in the *Washington Post* with his tongue slightly in cheek, explicitly compared the film itself to a bomb: “One can imagine an ABC engineer quivering slightly as he presses the button on Sunday night that will send the film into millions and millions of American homes.”

The National Education Association issued a parental advisory for the film—its first. A starkly worded memo circulated in the New York City school system summed up the dilemma posed by the film, which was seen as both learning opportunity and dangerous agent:

ABC’s intention in presenting it is to educate the public about nuclear war. However, the scenes of terrible destruction, people being vaporized, mass graves, and death from radiation sickness may not be helpful or educational for children and young people. This is not ‘just one more horror film.’ Adults can confidently tell youngsters that ghosts and vampires don’t exist. But the threat of nuclear war is real.

By 1983, researchers had been looking at the effects of television on young people for two decades, asking how time in front of the television affected learning, social relationships, and responses to advertising. Since the early 1960s, concerns over television violence and its possible impact on children’s behavior had particularly preoccupied researchers and the public.

Comments offered to media outlets before *The Day After* reflected this history of concern. Dorothy Singer, co-director of the Family Television Research and Consultation Center at Yale, gave the *New York Times* a very graphic depiction of the potential dangers for young children who saw the film without warning: “I think ABC can do a lot more to alert parents and kids to the fact that this is not just another made-for-television movie ... I’m worried about the baby sitter who’s heard about the show and turns it on, and then the 4-year-old crawls into her lap to watch it with her.” Singer’s scenario pictures the truthfulness of the



Anti-nuclear demonstrators in Berkshire, UK, at the Greenham Common airbase, protest the arrival of 96 American cruise missiles in 1983. The Greenham demonstrators were mostly women, who leveraged gender and their status as mothers in their arguments.

*Daily Telegraph*

film as a deeply damaging shockwave, exploding into young people’s consciousness without warning and wreaking havoc.

Many psychiatrists interviewed by the media before the movie aired took their cues from Robert Jay Lifton’s theory of “psychic numbing,” arrived at in his work on the aftermath of the Hiroshima bombing. In 1982, Lifton argued that nuclear fears had the potential to create a dangerous apathy. Experts warning about *The Day After*’s effects on older children were intent upon warding away “cynicism” or “numbness.” Dr. Kenneth Porter, family therapist and assistant clinical professor of psychiatry at the Columbia University College of Physicians and Surgeons and co-chair of the NY chapter of Physicians for Social Responsibility, told the *Times*: “It’s extremely important for people to talk about *The Day After* themselves and not let television do the talking and feeling for them. If they do that, they’ll lock feelings of despair and fatalism inside them.”

In keeping with this therapeutic intent, ABC drew up a viewers’ guide and distributed half a million copies of the viewers’ guide to schools and community groups, inviting prospective viewers to write in for a free copy. The guide assumes fear as a default stance. It features an epigraph by Camus: “The seventeenth century was the century of mathematics, the eighteenth that of the physical sciences and the nineteenth that of biology. Our

twentieth century is the century of fear.” Before viewing, audiences, young and old, should talk to one other about their anticipated reactions:

“Complete this sentence: Whenever I try to talk about my feelings on nuclear war, what usually happens is \_\_\_\_\_. ”

“Some people say that Americans worry about too many things which may never come to pass. Do you agree or disagree? Discuss.”

The anxious lead-up to the movie’s premiere offered fodder for conservatives looking to discredit nuclear fears as, essentially, unmanly. In the *National Review*, William F. Buckley, Jr. mockingly answered Question #8 in the discussion guide (“My greatest fear about the Nuclear Age is—”) by deploying the gender-loaded H-word: “That we will become so hysterical we will cease to see that the only way to avoid nuclear war is to cherish our nuclear arsenal.” Buckley had his own fears—that America would fall under the thumb of the repressive Communists. These, of course, he saw as rational.

Other conservatives, agreeing with Buckley, made some concrete attempts to undermine the movie’s success. Phyllis Schlafly protested the movie (“a

two-hour political editorial”) by writing to ABC affiliates. Douglas O. Lee, chairman of Americans for Nuclear Energy, Inc., sent a letter to execs of Fortune 500 companies, calling *The Day After* “highly emotional propaganda for the antinuclear movement in this nation,” and asking the executives to avoid advertising on ABC during the broadcast.

The movie itself is—forgive me!—boring. Much more terrifying and unrelenting televisual apocalyptic narratives have been available before and since. A viewing is enough to convince me that *The Day After*’s potency was in its ubiquity.

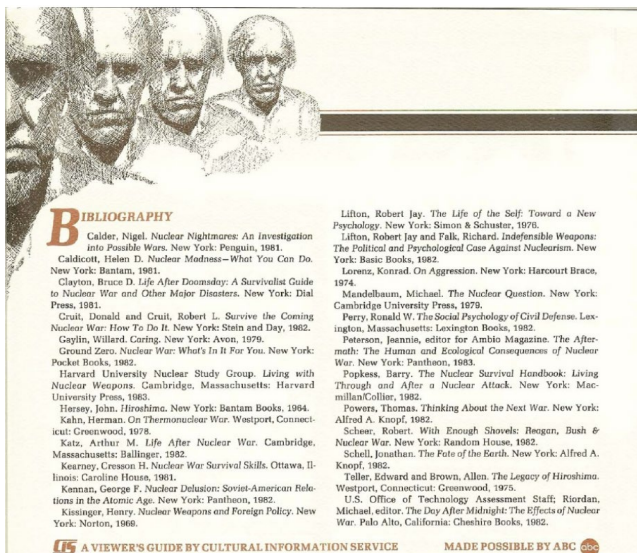
The opening credit sequence, whose soundtrack and point of view was inspired by Pare Lorenz’s 1938 documentary *The River*, sweeps over the Kansas landscape, taking in baseball diamonds, harvesters, trains, and a beautiful frolicking horse. Children figure prominently: in school, with their families, riding bikes.

The first half introduces characters living in and around Lawrence, Kansas, whose days march on in a fog of routine represented as typical American life. College students, surgeons, nurses, kids, parents, soldiers are all oblivious to the impending doom.

The film is split in two by the bombing sequence, which uses X-ray effects to show the destruction wrought on individual humans. “ABC trimmed back the destruction scenes during the final edit of the film late last summer,” Glenn Collins reported in the *Times*. “Originally there were more shots of people being vaporized during the initial blast, including a mother and her baby standing by a window in the child’s room ... Network executives were petrified in the final days before broadcast.”

To watch a video of the credits sequence from *The Day After*, visit:  
<http://appendic.es/m/1k>

To watch a video of the bombing sequence from *The Day After*, visit:  
<http://appendic.es/m/1v>



The bibliography included with the ABC viewers’ guide suggested a combination of reflective and survivalist literature. *The Day After*’s Jason Robards, in various stages of radiation sickness, appears at the top of the page.



The movie was originally supposed to be twice as long, with three-fourths of it taking place after the bombs drop, depicting the violence, disease, and hunger of a post-nuclear landscape. (That was much the shape of the documentary-style BBC series *Threads*, a much grimmer narrative aired in 1984.)

In the “aftermath” portion of the film, although there are paralyzing scenes of hospitals full of casualties, there are also moments of human connection: a soldier helps a mute refugee; the doctors at the hospital work until they drop; a baby is born. In this clip, Steve Guttenberg (then credited as “Steven Guttenberg”), playing a college student, reconnects with a girl he met after the blast. Their mutual baldness and sickness becomes a point of sympathy, bringing them together despite the awful situation.

In the end, despite reaching such an astronomical percentage of American households, the program made surprisingly little money for ABC. The 30-second ads sold during the broadcast went for cheaper than usual, because of the whiff of controversy, and the network purposely didn’t try to sell any commercial time during the 90-minute-long “Viewpoint” discussion that followed the movie. Revenues from foreign broadcasts (the film was shown in Germany, Japan, Switzerland, the UK) bumped up the network’s profits.

The “Viewpoint” discussion, anchored by Ted Koppel and conducted in front of a live studio audience, revealed a strict division between the conservative and government voices (Buckley, Jr., Henry Kissinger, George Shultz, Brent Scowcroft, and Robert McNamara) and the representatives of liberal humanism (Carl Sagan and Elie Wiesel).

Sagan spoke of the unknown dangers of nuclear winter, and Wiesel eloquently reminded the audi-

ence of the danger of concentrating such crushing power in the hands of a few (“I am afraid of madness,” he said). But whenever Koppel, or an audience member, brought up the issue of fear or emotion, the first group turned to dry policy discussions, or denied the very idea of an emotional reaction.

Kissinger, for one, dismissed the movie as “indulging in an orgy” of provocative depictions. He said: “We can’t scare ourselves to death. If the Soviet Union gets the idea that the US has psychologically disarmed itself, the precise consequences we describe here will happen.”

Kid fears came up more than once. A teacher in the audience asked the panel about how to talk to his students about their worries, saying (with echoes of Lifton’s theory of psychic numbing) that he worried that they were irretrievably cynical. Robert McNamara replied, in a seeming fit of pique, calling for confidence in speaking with young people.

McNamara’s reaction seemed to blame scared parents and teachers for children’s fears, seeing the dynamic as the product of poor communication on the part of quivering adults, not as a result of the nuclear geopolitics.

What were the actual effects of *The Day After*, and of the nuclear fears of the early ‘80s, on kids? The media gathered anecdotes (“My opinion now is that the movie was just a flop in our school,” said 12-year-old Matt Goldman, a seventh grader in Evanston, Ill. “A few days afterwards, no one really talked about it again. We dropped it”) and the scientific and medical communities carried out selected studies.

Dr. Thomas Boll, who surveyed health facilities looking for referrals related to the film, told the *New York Times* that they found no effect. “The cautions were gratuitous and over-exaggerated,” he said. Yale’s Dorothy Singer, who had publicly warned of the effects of the movie, pled an interference effect: “I had a sense that if we’d done nothing, if we hadn’t warned parents, then there would have been many more problems than we had. We know that many parents forbade their kids to watch, or watched with them.”

To watch a video of the effects of radiation from *The Day After*, visit:  
<http://appendic.es/m/1w>

To watch a video of McNamara’s response on “Viewpoint,” visit:  
<http://appendic.es/m/1l>

Surveys conducted among students who had seen the film found that effects were variable, and not necessarily tending toward activism. Psychologist Richard L. Zweigenhaft, who interviewed high school students and college freshmen in 1982 and 1984, wrote of his findings in the *Bulletin of the Atomic Scientists*: “A year after ‘The Day After,’ students were more likely to know certain things about nuclear weapons than they were two years earlier but showed no evidence of knowing more about the political context in which nuclear weapons exist; in fact, they showed some evidence of knowing less.”

Zweigenhaft saw these consequences as drastic, and negative:

The combination of greater knowledge about the destructiveness of nuclear weapons and woefully inadequate knowledge about the historical and political context in which they exist indicates that students now are receptive to emotional rather than rational approaches to this issue. These students are particularly likely to accept uncritically such dreamy concepts as Reagan’s “Star Wars” proposal. Perhaps this helps explain why the nation’s youngest voters voted overwhelmingly for Reagan.

And Robert Coles, interviewing children for his books *The Moral Lives of Children* and *The Political Lives of Children*, found very little nuclear fear at all. Coles critiqued much of the existing research, arguing that samples had been skewed toward the wealthy and those whose parents were already involved with anti-nuclear activism.

The controversy within the psychiatric community provided fodder for conservatives looking to

discredit the use of kids’ fears as political capital. Writing in *Commentary* in 1985, Joseph Adelson and Chester E. Finn, Jr. leaned on Coles’ findings heavily. Adelson and Finn accused psychiatrists (including Lifton) who brought children in to testify to Congress of turning kids into “hostages to ideology,” and of greatly exaggerating the incidence of their fears.

More than that, though, the two simply didn’t believe that adults should look to children’s feelings in making policy decisions. “That we can attain truth more easily through innocence than through intelligence,” they write, “is a notion too sentimental to withstand scrutiny ... To accept the childlike as testimony or as argument requires a suspension of disbelief.”



Today, activists working on the issue of climate change often invoke children: their futures, their fears. Part of the problem with discussions of climate science is scale: change is occurring over a span of time and space that’s hard to connect with, intellectually and emotionally. Children, as many activists point out, will be alive to bear the brunt of the changes, which they did not cause. Kids’ emotions about this fact are now political. The connection between the historical fears of nuclear bombing and the present-day anxiety over climate is often explicitly drawn (a Washington Post reporter working on a 2007 story about climate change anxieties interviewed a therapist who said “Kids used to have fears of war and nuclear annihilation. That’s dissipated and been replaced by global warming”).

Conservative opposition to the presence of these fears in public discourse has also carried over into the climate debate. The concepts of captivity, indoctrination, and impressionability that Finn and Adelson identify are now forefront in conservative criticisms of activist climate change curricula. Bjorn Lomborg complained in *The Guardian* that “the continuous presentation of scary stories about global warming in the popular media makes us unnecessarily frightened. Even worse, it terrifies our kids.” Recounting a conversation that he had with “a group of Danish teenagers,” Lomborg claimed that one “worried that global warming

Today, activists working on the issue of climate change often invoke children: their futures, their fears.

would cause the planet to ‘explode.’” Lomborg emphasized that “this scare was intended,” arguing, much like Finn and Adelson had, that adults were purposefully, and unnecessarily, terrifying children.

In 2013, the National Research Council, National Science Teachers Association, and the American Association for the Advancement of Science released a new set of non-binding standards that advanced the importance of climate change education to elementary school, and advocated for interdisciplinary approaches to teaching the subject. Blogger The Lonely Conservative, a mom named Karen (identified only by her first name), warned, “The climate alarmists are going to have a new captive audience.” Confrontations between parent and the child would be forthcoming, Karen advised: “Add Climate Depot [a denialist site] to your browser bookmarks so you can be armed with the truth when your children come home and tell you what they learned in school about climate change.”

Denier “JS,” who pseudonymously blogs for the site Climate Lessons, has compiled a massive list of international examples, as reported in the media, of children’s climate fears. In JS’s cosmology, innocent children’s mental states are threatened by climate “alarmists” overreach, and long-suffering parents are left to pick up the pieces.

There seems to be a fundamental disconnect between conservative and liberal-activist beliefs about the place of childhood in the public sphere. While activists present children’s feelings as crushing, final evidence of the awfulness of a problem, conservatives raise several levels of doubt: first, that the phenomenon prompting these fears is as bad as claimed; second, that kids even feel as badly as activists say they do; third, that such feelings are “natural,” rather than stoked up by liberal agitation in the form of media and curricula. This idea that children are the truth-tellers, closer to the marrow of human experience, is part of a sentimental Romanticism that conservative onlookers decry, arguing that we can’t conduct national policy based on the anxieties of children.

For both sides, children’s fears stand in as a proxy for all of our emotional responses around issues

of apocalyptic risk: our “hysterias,” nightmares, and forebodings. The idea that conservative ideology is free from such responses is part of a self-presentation deeply rooted in ideals of rational masculinity. Kids are afraid; moms are afraid; therapists make soothing noises; men know the truth of the risks, see the real possible futures, and act accordingly.



"A winter day in Vienna when the world's most powerful  
oil barons stared down the barrel of a gun.  
City of Vienna



# First Day of Terror

by Christopher R. W. Dietrich

Carols echoed through the Christkindmarkt in Vienna on the morning of December 21, 1975. The sky was overcast, and trees stood leafless in the neighboring parks. The edelweiss flowers adorning many of the stalls and shop windows were past their bloom, and their petals and leaves had begun to crumble.

Shoppers and stall-minders alike—transfixed by the edelweiss, roasting chestnuts, mulled wine, and gingerbread—paid little mind to the building across the street. That concrete-and-glass rectangle, shared by the Organization of Petroleum Exporting Countries and the multinational oil giant Texaco, was one of many drab and unassuming buildings that had popped up amidst the grandeur of Austro-Hungarian modernist buildings and parks. But if the architecture was neither

eclectic nor unusual, the moment that would soon face its occupants was. As six casually dressed young people carrying black Adidas bags turned the corner and began to approach the building, the oil ministers from Saudi Arabia, Iran, Iraq, Venezuela, Libya, and Algeria had begun another round of discussions about the price of oil. Their meetings had been headline material for over two years, since October 1973.

That month, the Egyptian army had thundered across the Suez Canal while Syrian troops stormed into the Golan Heights in a coordinated attack on Israel. They acted with Saudi Arabian, Iraqi, Kuwaiti, and Libyan financing, as well as Algerian, Tunisian, and Moroccan material support. Soviet leaders expressed frustration that Egyptian President Anwar Sadat had disregarded their counsel

against war, but immediately began to resupply their “Arab brothers.” Ten days later, after Sadat refused a cease-fire, the Nixon administration announced a multi-billion dollar arms lift to Israel. The Arab members of OPEC hastily convened at the Kuwait Sheraton. They announced the imposition of an oil embargo on the United States, general supply cuts, and a 70-percent increase in Persian Gulf oil’s posted price, from \$3.01 to \$5.11 per barrel. The non-Arab OPEC members immediately followed suit. For the first time in their history, the oil-producing nations had set the price of oil.

According to its more radical personalities—men from Iraq, Algeria, and Libya—OPEC had thrown off the imperialistic shackles imposed upon them by the multinational oil companies in the first half of the twentieth century. When OPEC successfully increased prices fourfold between October 1973 and January 1974, its most vocal leaders framed their success in the language of liberation from what former Saudi oil minister Abdullah al-Tariki called “petroleum colonization.” Algerian President Houari Boumediène emphasized the “new equilibrium between developed and developing states” and the possibility for “non-aligned [countries] to assert greater control over their natural resources.” The Third World could not allow the First “to establish a protectorate” over the new economic order as it had the previous one, he told a reporter at *Le Monde*. More conservative, pro-American leaders echoed that sentiment. “It is only equitable and just that the oil producing countries” had ended the era in which oil sold “at ridiculously low prices,” the Shah of Iran opined from the steps of the OPEC headquarters in December 1973.

The West owed the rest a debt. That position had some truth; the biggest and richest oil concessions in the world had been granted in the high era of imperialism, when gunboat diplomacy had backed Western corporate executives in their quest to wrest wildly profitable terms from their weak Middle Eastern counterparts. An oft-cited example, the 1925 oil concession to Iraq, had only been granted when Britain had threatened to lop off the oil-rich province of Mosul from the rest of the country. That vision of an imperial economic hangover resonated broadly with nationalists across the “Third World” of former colonies and

other poor nations. The shared history of exploitation, formal or informal, had left a backlogged legacy. “Economic emancipation,” to use a phrase that became common among the leaders of the Non-Aligned Movement, had become essential to the ongoing struggle to eliminate political domination.



At a Special Session of the United Nations in April 1974, the representatives of the developing nations universally supported OPEC and condemned “the current structure of economic relations.” The ruthless dictator of Uganda, Idi Amin, summarized that position a year later. The moves of OPEC were part of a greater attempt at “the restoration of full economic rights to the hitherto exploited, oppressed, and enslaved peoples of the Third World.” The end of formal colonialism was but a single step in a longer journey. “The worldwide war for self-determination and political independence is almost over now, but the struggle for self-reliance continues,” he continued. “The present stage in this struggle is for economic independence.”

The images of an enslaved past and a liberated future had bewitched the imaginations of Third World elites of all stripes since the 1950s. OPEC had turned upside down the economics of empire, and pushed back the forces of the past. The OPEC leaders shined that point to rhetorical perfection in their public statements. According to them, the oil-producing nations had infused the striving rhetoric of political liberation into a vast domain of economic life. Their control over the price of oil was testimony to their success.

But rhetoric flattened reality on both the national and international level. The Iraqi, Iranian, and Ugandan leaders sang no paeans of freedom at home. Neither did the struggle of the oil-producing nations exist in a global vacuum in which the imperial past was the only concern. The rise in oil prices, for example, also fed a narrative of decline among the leaders of the industrialized West. In a national television address, French President Georges Pompidou nostalgically likened the advent of what Western officials called “expensive oil” to “waking up from a too beautiful dream.”

The change was so great for U.S. President Gerald Ford that he would compare the potential for U.S. “energy independence” to the 1776 American Revolution in his bicentennial State of the Union message. The energy crisis threatened to cause “the moral and political disintegration of the West,” U.S. Secretary of State Henry Kissinger told visiting diplomat after visiting diplomat. In those circles, the oil producers were vilified as the evildoers that caused the widely-proclaimed energy crisis. Officials from the United States and Western Europe consistently railed against the producers as “irresponsible,” “irrational,” “destructive,” “demagogic,” and even “theological.” That dramatic dialectic identified “OPEC unilateralism” as an illiberal bogeyman, a negative counter-image of the free market.

Above the different strands of political interpretation and posturing, the price of oil remained stratospheric. It stood at around \$13.00 on that day in Vienna in December 1975, more than quadruple its price before the October 1973 war. The consequences of expensive oil for the “non-oil producing world” continued to be many and far-reaching. Oil import bills piled up for developing nations, throwing askew the plans for economic growth of a generation of Third World leaders. The non-OPEC nations where there was oil, most prominently Mexico and Brazil, invested heavily in its extraction. The Soviet Union, a rickety state with a dismal economic future, reaped a sudden bonanza from the profits of their oil exports. Western states promoted energy conservation and the

production of “traditional alternatives” like coal and shale, and environmental movements faced off against renewed popular support for those less expensive but dirtier sources of energy.

Even the multinational oil companies, whose shareholders benefitted handsomely from the price increases despite being international poster boys for anti-imperialist derision, were not immune to the consequences. Texaco and the other American giants were under attack in U.S. Senate hearings for reaping unfair “windfall profits” from the price increases as they passed on the cost to the average consumer. One commentator called the oil companies “tax collectors” for OPEC. “I blame the major oil companies,” a grocery store owner in Miami said. “I think they used the Arabs as an excuse to raise prices.” The New York Housing Authority and the Lefrak Corporation, the largest private landlord in New York City, even brought suit against the multinational oil companies for unduly passing costs onto the consumer.



When Ahmed Zaki Yamani, the Saudi Oil Minister, awoke early that morning, he showered, parted his thinning black hair sharply on the side, donned his usual tailor-made suit, knotted his silk tie in a double windsor, and left the warm confines of the Vienna Hilton. Upon his arrival to OPEC Headquarters, he engaged in the usual pleasantries with his counterparts and then began discussion on the relatively minor issue of price differentiation between different sources and qualities of crude.

Outside in the foyer, the OPEC receptionist sleepily answered a phone call. When she looked up from the switchboard, two young men stood in front of her. One wore a fur hat and held a pistol. The other was a middle-aged man of average height, broad through the shoulders, and narrow between the eyes. He wore a beret, tan pants and a leather jacket that fit him snugly, brown shoes, and trench-coat. A black submachine gun lay comfortable in his hand, not pointing at anything.

“Where is the conference room?” he asked. The receptionist glanced in that direction, grabbed her telephone, and ducked beneath the desk and



The 1973 oil crisis frazzled nerves in the United States.  
Wikimedia Commons



dialed the police. The man in the fur hat leaned over the desk and pointed his pistol at her head. He then shifted his aim and shot the telephone and the switchboard. More shooting started. Within minutes, the two men and their accomplices had killed three people.

Upon the first shots, Yamani and the other ministers dove to the ground. Sporadic bouts of gunfire, and then an explosion, rang out as they trembled on their hands and knees. The ministers heard glass and tile fall in the corridor outside the conference room, clattering like marbles on the hard floor. Another round went into the ceiling, Texaco's floor, and then an explosion. Running footsteps came closer and closer.

And then, for a brief moment, silence. The first terrorist burst into the room and covered the cowering ministers. A second terrorist joined the group, breathing uneasily.

"Have you found Yamani?" he asked out of that heavy nothingness.

Yamani "became yellow to the extent that no one could have imagined that there was any blood in his face," the Libyan oil minister later joked to reporters. Never taking his eyes off the man who had spoken, Yamani crawled from under the conference table, stood up, and raised his hands in front of him, as though to placate his unknown adversary.



Yamani told a Saudi television crew that his initial thought at that moment was that the group was comprised of "European terrorists" come to "avenge themselves" for the havoc high oil prices had wrought on the international economy. He couldn't have been more wrong. Frontiers are places of constant contact, and few are more permeable than those of political imagination. But the frontiers between the oil producers and the oil consumers, between the OPEC ceiling and the Texaco floor, between imaginary terrorists and real ones, were not the only ones that the bullets would cut across that morning. As Yamani and the unknown assailant stared at each other for the

first time, both knew that long-running tensions also existed within OPEC itself.

Since the founding of OPEC in 1960, deep internecine suspicions among its members had bedeviled the organization. Yamani had been a lightning rod for controversy since assuming the direction of Saudi oil policy in 1962. He had begun his consistent habit of irking the more radical oil ministers almost immediately. In the first official negotiations between OPEC and the multinationals between 1962 and 1965, on the topic of royalty expensing, Saudi Arabia and Kuwait sided with Iran rather than Indonesia, Venezuela, and Iraq. The Kuwaiti legislature had rejected the agreement, one legislator calling the multinational corporations' negotiating strategy as "threats laced with a bribe." A year later, he hadn't wasted any time toadying up to the multinational corporations, according to his critics. Then he backed crab-like into the concept of "participation," or partial national ownership, as a moderate alternative to the nationalist calls coming out of Iraq, Algeria and, increasingly, pre-Qaddafi monarchical Libya. In a speech at the American University in Beirut that year he described the bond between the oil companies and the producing nations as "indissoluble, like a Catholic marriage."



But Yamani also played a pivotal role in consolidating the power of OPEC to raise prices since then. In a 1968 speech he described oil company executives as "obsessed with the empire they have built." Between 1970 and 1973, he consistently pushed for greater supply and price control for Saudi Arabia, often in conjunction with the more radical oil ministers from Libya, Iraq, and Algeria. The American embassy reported that under his guidance Saudi Arabia and Algeria had become "strange bedfellows of Arab geopolitics." Yamani and his Algerian counterpart had become *de facto* spokesmen for the oil producers, playing "a lead in asserting ... the need for producing countries to play a greater role in the destiny of the oil industry." When the Algerian president called for an unprecedented Special Session of the UN General Assembly to discuss "economic colonialism" in April 1974, Yamani echoed the sentiment and the language when he told Kissinger that the United

States should not try to establish a “trusteeship” over oil prices.

Yamani often explained his position in other terms. “Saudi Arabia would leave the running to Libya and Iraq,” he told one American official. If these countries received higher levels of participation, “Kuwait and Saudi Arabia could not be seen to be lagging far behind.” But the result was the same. As Yamani became more intransigent in the early 1970s, he set a hard floor for the dialogue. That a conservative ally in the Cold War did so was important. He would never assail neocolonialism, but neither would he allow the oil companies to retain control over oil that rightfully belonged to Saudi Arabia. It was a matter of fact that “new winds were now blowing,” he told the American ambassador, “as marked by Algerian action, and Libyan and Iraqi attitudes.”

Yamani explained the gulf between Saudi Arabia and the radicals in terms of their political sameness. This was anti-colonial talk. Such a statement struck an ultra sovereign note, and could have been lifted directly from the Algerian or Libyan oil ministers at their most sulfurous.

This later led Kissinger, no novice at playing the martyr, to single out the “feckless and gutless Saudis” for particular derision. Many observers of the Arab world and the international oil scene also saw Yamani as hypocrite. For them he was the most thinly veneered plaster saint, his anti-colonial rhetoric nothing more than an outward form of piety. Whether or not Yamani spoke with conviction mattered little in December 1975, because his critics conveyed one thing quite unambiguously: he might have been an integral part of OPEC’s recent success, but he was not to be trusted.



The still-unidentified intruders divided their hostages into three groups. The ministers from Iran, Qatar, and the United Arab Emirates joined Yamani as “criminals.” In the “liberals and semi-liberals group” stood the representatives from Iraq, Libya, Algeria, and Kuwait. The non-Arab members, except Iran, joined the “neutralist group.” The leader of the assailants then told the ministers in an

accented Arabic that they were Palestinian commandos.

So that was it. The disputes between the different oil-producing nations had jaggedly crossed paths with an intra-Arab dispute about how to deal with Israel since its independence in 1948. Weeks before the June 1967 Arab-Israeli war, Egyptian President Gamal Abdel Nasser told the Arab public that “all weapons must be used in this battle; whether by governments or by the people.” The leaders of Arab labor unions immediately called on their workers to “destroy the oil sources, pipelines and installations from which the enemy could benefit.” The implicit and explicit threats effectively dragooned the oil-producing monarchies of Saudi Arabia, Kuwait, and Libya into support of an Arab oil embargo. Each understood that their population would tolerate no actions short of oil withdrawal in the case of war. “Any Arab leader who refused to do so would risk literal as well as political assassination,” the American ambassador in Cairo wrote.

After the Arab-Israeli war ended, a public quarrel occurred between Yamani and Tahir Yahya, the Prime Minister of Iraq. Yamani told the *Financial Times* that if the embargo continued the Arab world “stood to lose as much economically as they had already lost territorially,” a public position that U.S. Secretary of State Dean Rusk welcomed as evidence of Saudi “enlightened self-interest.” The *New York Times* reported, “The Arabs, as usual, had a proverb to fit the situation. *Rahet al-sakra; wajjit al-fakra.*” The newspaper slickly translated the couplet: “Gone the wine fumes; thinking resumes.” A different rhyme applied in Iraq. Yahya responded by accusing the Saudis of deserting the Arab cause. *Al Ahram*, the influential daily newspaper in Cairo, called the Saudi pronouncement a “shameful act.”

A meeting of Arab heads-of-state in Khartoum settled the rift in August. The resultant communiqué is most famous for its “three noes”—no peace, no recognition, and no negotiation with Israel—but it had other consequences. Saudi Arabia, Libya and Kuwait would pay \$378 million of reconstruction aid per year to Egypt and Jordan. In return, the producers received approval to resume oil shipments to the West without accusations of

betrayal. The Khartoum payments soon began to go directly to the Palestinian groups and became their central means of financial support, according to reports from American embassies, the CIA, and the Near East Desk of the State Department.

At the same time, Palestinian guerrillas had become the “popular symbols of defiance of Israel” throughout the Arab world, as the authors of an April 1968 U.S. National Intelligence Estimate wrote. Moreover, the “new breed” of guerrillas subsisted not just on the Khartoum money, but also on the “heavy financial support ... from well-to-do Palestinians and other Arabs in the oil-rich states.” Arab oil-producing states—led by Iraq and Libya, but followed by Saudi Arabia and Kuwait—expanded their funding afterwards to the extent that American officials believed the increased petroleum receipts of the Arab world would counteract their attempts to marginalize pro-Palestine “radicals.” The State Department concluded that it was likely that official and unofficial Saudi subsidies would increase despite the Palestinian groups’ new turn towards hijackings and kidnappings. “The exploits of the fedayeen ... remain the favorite topic of the Saudi media,” the U.S. embassy reported. “There was no noticeable slackening in public support for the commando cause.” The international strategies of pro-Palestinian groups were the objects of widespread sympathy. Prince Fahd, the Saudi Defense Minister, announced a 50,000 riyal personal gift to the “families of the martyrs cause” in June 1970.

But sympathy and personal gifts were not enough. The September 1973 taking of hostages in the Saudi embassy in Paris evinced the boldness of nationalists acting outside the region, as well as placing on display the often contradictory relationship between oil power and the movement for an independent Palestine. It also sent a message: Saudi Arabia would increase what American officials called the Khartoum “insurance policy” one way or another. But the Saudi decisions in 1974 and 1975 to lift the embargo and put a cap on the price of oil had angered Palestinian nationalists.



The leader of the raid transmitted his demands. A bus with darkened windows would arrive outside



Carlos the Jackal's FBI photo.  
FBI

at 7:00 a.m. the next day to take them to the airport, where a crewed airplane would be waiting. He also passed on a manifesto to be broadcast on Austrian radio and television every two hours, beginning at 4:30 p.m. The eight-point document combined the Palestinian cause with the calls for the nationalization of petroleum. It reads in part:

Reaffirmation of the three fundamentals of the 1967 Khartoum Arab summit: no treaty with no negotiation with, and no recognition of the state of Zionist aggression. Denunciation of all compromise and all political plans aimed at destroying this anti-capitulation plan and aimed at giving tacit or explicit legality to aggression from any part of Arab Palestinian land ... . The declaration of the principle of





Carlos the Jackal (visible at far left) with the OPEC hostages exiting the bus en route to a plane.  
Bernhard Fry

full sovereignty over “our” petroleum and financial wealth through the nationalization of petroleum monopolies and the adoption of a national petroleum and financial policy which will enable the Arab people to use its resources for its development, its progress, the safeguard of its national interests and the strengthening of its sovereignty alongside the friendly people of the third World so they can emerge from their economic stagnation, on condition that priority be given to financing the confrontation countries and the Palestinian resistance.

If the demands were not met, he would begin to kill OPEC ministers.

The leader of the raid then began a kindly conversation in Spanish with the Venezuelan oil minister. Yamani’s discovery that his captor was “the well-known leftist terrorist” Ilich Ramírez Sánchez, better known as Carlos the Jackal, was unnerving. Just the previous summer, the French government had unearthed a detailed plan for Yamani’s assassination in a raid on the Jackal’s Paris hideaway.

The Jackal turned to Yamani, who stood separately from the group. As members of his team wired the room with explosives, he took Yamani’s arm and walked him down the hallway into an office. The office was bare except for a few binders on a shelf. The room was filled with shadows. The men sat down and Carlos screwed his dark brown eyes at the wall. His voice was solemn when he shifted his focus to Yamani’s face.

He would make an example out of Yamani to protest the policies of Saudi Arabia. If the Austrian government failed to have his statement read on the radio, he would be executed and his body would be thrown into the street.

Yamani stared back. Carlos rocked back in his chair and smirked for a long silent moment. Surely Yamani would bear no ill feeling against his killers, he continued. A man of his intelligence recognized the basic integrity of the cause. Carlos laughed, but his eyes remained hard.

Yamani asked, “How can it be that you tell me that you will kill me and then ask me not to feel bitterness to you?”

Carlos twisted his face towards Yamani and responded. "So far as you are concerned I am just making you aware of the facts," he said. His eyes darkened, at first in a measured way, but then more and more viciously. He scowled now, his malice or cruelty or whatever moral void confronting Yamani as if through a mask; the hard face of a man who woke up each morning with a longing that seldom found indulgence.

Carlos scratched his hairline and wrinkled his forehead, as if to think. But he didn't continue. He rested his arms across his forehead and looked up at the ceiling. After a moment or two of silence, he stood up and told Yamani to do the same. He then motioned Yamani back to the conference room.

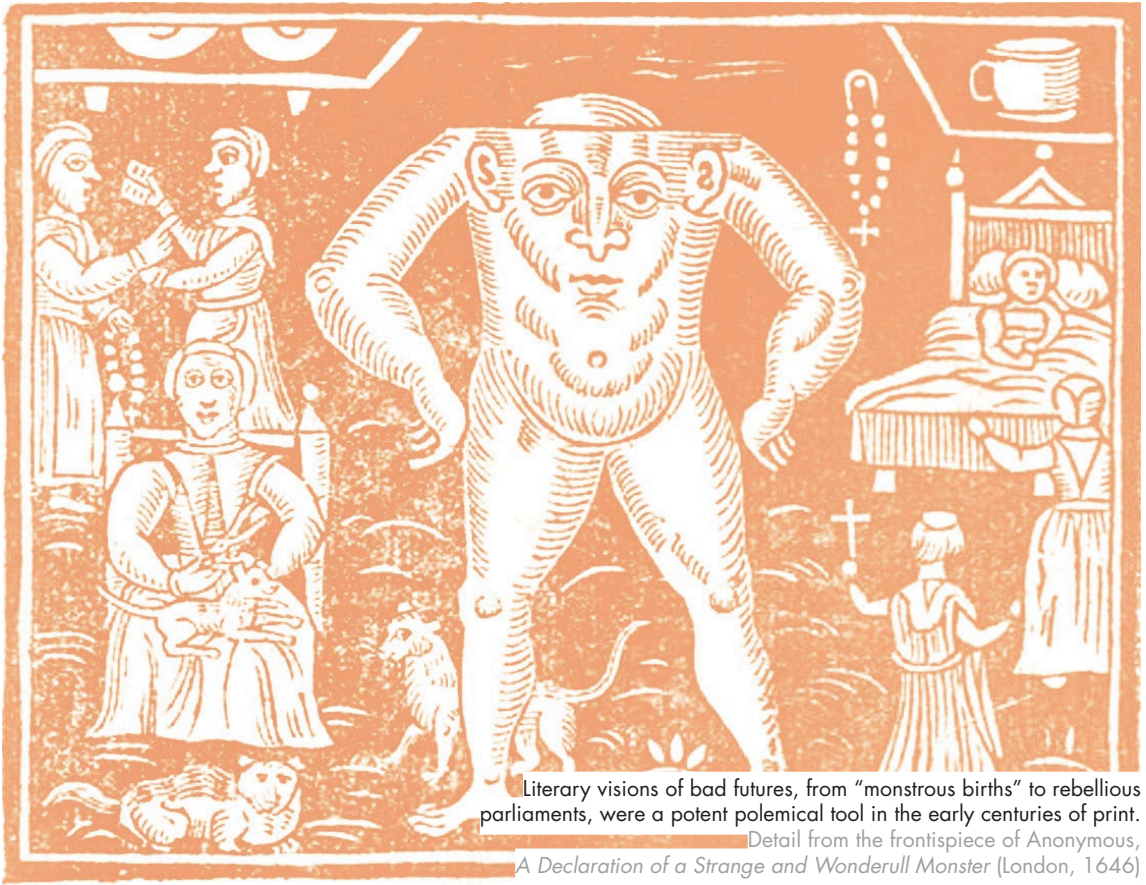


Later that afternoon, his hand caught Yamani's arm. It was cold. He leaned even forward with a smile and methodically spaced his words. "Remember our conversation," he said softly. The sentence fell into the air like a hammer.

The sun dropped ever closer to the horizon, the sky gray behind the slate buildings and the empty stalls, and the streets were filled with police cars. Outside the reach of their flashing lights, the city's Habsburgian splendor darkened and became indistinct.

Austrian Chancellor Bruno Kreisky agreed to supply the plane and have the statement broadcast, and Carlos set about finding food for the hostages and his crew. After he rejected an order of one hundred sandwiches from the Austrian authorities because they had ham, the Hilton sent over the food from an OPEC banquet planned for that evening. Most of the conference room lights had been shut out, so the hostages and the kidnappers dined by candlelight.

At some point that night, sleep came to the oil minister. Then, in front of the Christkindmarkt at 7:00 a.m. on December 22, 1975, the bus to the airport rounded the corner. The rising sun flashed off its windows like the blinking eyes of Argus.



Literary visions of bad futures, from “monstrous births” to rebellious parliaments, were a potent polemical tool in the early centuries of print.

Detail from the frontispiece of Anonymous, *A Declaration of a Strange and Wonderfull Monster* (London, 1646)

## Monstrous News: the Futures of the Mistris Parliament Plays

by Marissa Nicosia

In a dark room in an obscure corner of London, Mistris Parliament is giving birth to England’s future. Her offspring, the Child of Reformation, is destined to overrun the nation with meddling. She struggles, sweats, and vomits. Her visitors and attendants cannot relieve her suffering. The birth pangs of her monstrous body, both female and legislative, are a foul clarion call for the embattled king’s loyal supporters. The future is coming. It is disgusting and transgressive; it must be avoided at all cost.

This scene is from Mercurius Melancholicus’s *Mistris Parliament Brought to Bed of a Monstrous Childe of Reformation*, a remarkably brief play issued as the first installment of the *Mistris Parliament* se-

ries published in 1648. The Second English Civil War (1648–1649) was well underway, the reigning sovereign King Charles I was imprisoned in Parliamentary custody on the Isle of Wight, and England had been embroiled in civil conflict for over a decade. These events, naturally, led many writers to consider the immediate future of the polity.

If the future of a nation is its children, a monstrous birth is infelicitous at minimum and damning at worst. Authors of texts like this one asked their readers to imagine good, bad, and sometime even disgusting futures to galvanize support for causes ranging from King’s release to changes in tax policy. And like the *Mistris Parliament* plays, they display the increasingly imaginative uses of



sensational, national, and reproductive futurity in popular political writing. These visions of the future—positive or negative—were yoked to worldviews that tracked time according to providence and eschatology, cyclical logic, incremental decay, or, most innovatively, for the seventeenth century, progressive development. The archive of literary pamphlets from the mid-seventeenth century bears witness to this range of historical perspectives, from apocalyptic visions to local satires, triumphalist allegories, and cautionary tales. Whichever perspective governed the historical logic of a particular publication, one through line remained stable: The future of the nation was at stake.<sup>1</sup>

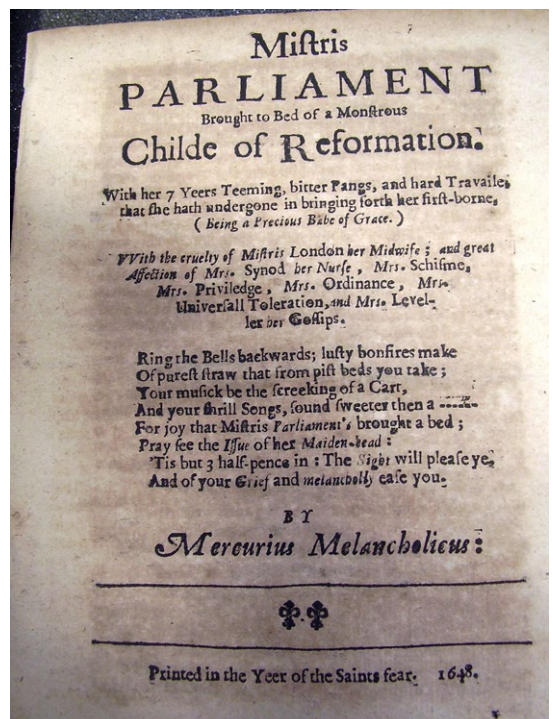


Historians still debate the causes and effects of the English Civil Wars, which raged from 1642 to 1651 and ended with King Charles I losing his head and Oliver Cromwell and his “New Model Army” in nominal control of a restive populace. One of their most well-documented results, however, was a simultaneous lapse in press oversight and a boom in the publication of political writing. By 1648 new titles were flooding booksellers’ stalls, especially short books, polemics, pamphlets, and petitions. Newsbooks, an early form of the modern newspaper, were issued weekly or bi-weekly under the aegis of partisan “Mercurii” like *Mercurius Britannicus*, which promoted Parliament’s agenda, and the Royalist *Mercurius Melancholicus*, which went above and beyond to support Charles. Royalist *Mercurii* like *Melancholicus*, *Elencticus*, and *Pragmaticus* all also experimented with literary newsbooks and pamphlets perhaps to accompany and support their more purely journalistic efforts.<sup>2</sup>

The *Mistress Parliament* plays are true products of the innovation and mayhem of the mid-seventeenth-century print market. Lois Potter quips that *Melancholicus* “exploited its illegal, hand-to-mouth status,” in the lone modern edited edition of the *Mistress Parliament* series. Instead of listing publisher, printer, and bookshop on its title page, *Mistress Parliament I* states that it was “Printed in the Yeer of the Saints fear. 1648.” The only convention it abides by is the date.<sup>3</sup>



Anonymous, *A Declaration of a Strange and Wonderfull Monster* (London, 1646)



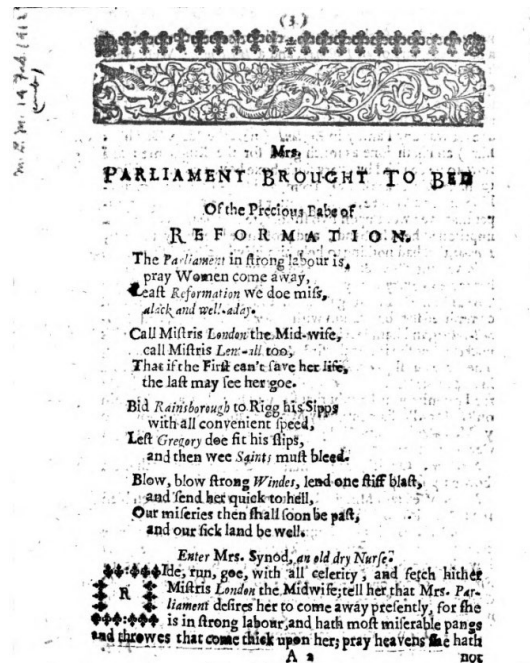
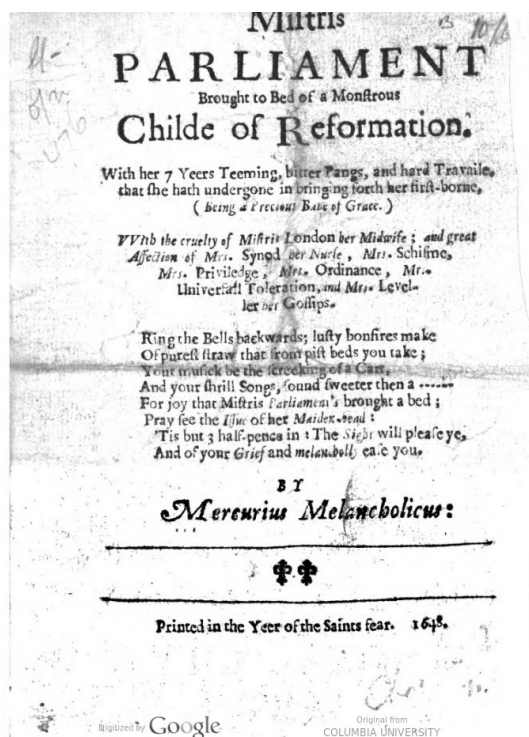
Title Page, *Mercurius Melancholicus, Mistress Parliament Brought to Bed of a Monstrous Childe of Reformation*.

University of Pennsylvania's Kislak Center for Special Collections, Rare Books, and Manuscripts.

The journalists behind *Melancholicus* decided to dramatize, rather than report, their discontent in the *Mist'ris Parliament* plays. This group of poet-journalists may have included John Crouch, George Wharton, Samuel Sheppard, John Cleveland, Samuel Butler, and the notorious Marchamont Nedham, all authors working for the prominent Royalist newsbooks in the spring of 1648. Each of these men had vested interests in the political, theological, and commercial outcomes of ongoing civil conflict: The *Mercurii* had skin in the game and fair and balanced reporting was neither the goal nor the result of their journalistic efforts. And they took a chance by circulating a short play instead of another genre of print polemic, like a pointed prose animadversion. It looks like their bet worked out. If *Mist'ris Parliament I* hadn't sold well, *Melancholicus* never would have issued a follow-up, let alone a series in four parts.<sup>4</sup>

Newsbook plays like the *Mist'ris Parliament* series circulated in the same printed format as other political works from this era. *Mist'ris Parliament I* looks like the surrounding images.

The images on this page are from the HathiTrust/Google digital copy of the Columbia RBML original of *Mist'ris Parliament I*.



(4)  
not taken some fright; I heard her the other day complain of a Scotchman, and of an Irishman, and a Welshman; Well, well, 'twas ill done, Ile besworne, to fight a Gentlewoman of her quality and breeding, one that came of so ancient and Monorable a Family too, as the Parliaments of England? Who is it almost that has not known the Parliament, to be as honourable as ever was any Family in England (next the King, God bless him) and hath done as much good for the Kingdome: and now to be despised by every lane-bowe boy, and loose fellow to make Rimes as they call them, and sing-songs of her, making of her a Whore, and so better then the arrantest Strumpet that ever went upon two shooes, telling her, that she hath imprisoned her Husband, and prostituted her body to a very Eunuch, that had nothing to help himselfe withall; and since, hath followed the Camp, & became an Ammunition-W, and turn'd up her tayle to every lowly ill-dependent Rascal in the Army; Sir Thomas himselfe, and king Cromwell too, a very Town-Bull, and committed flat fornication with Broom-men, Tinkers, and Ghennell-rakers, and hath learnt to murder, Rob, take Puries, pick pockets; but she is not the first Woman that hath done amiss, There are but slips occasioned by the weakness of her sex; Ile in and make her a Spirituall Cowdle to comfort her weak back; for I promise you, I doubt that she will have but an ill bargain on't. Mrs. Parliament; why Mrs. Parliament I say; how doe ye Mrs. Parliament; Will ye have a little Strong-waters, or a Cowdle to comfort ye?  
Mrs. Parl. Oh sick, sick; I must call Nurse; pray reach me a bowle: y haue y haue, y haue  
Nurse. Well said Mist'ris, reach it up; wish it: Heaven bless me! What is't that looks so red Mist'ris?  
Mrs. Parl. Oh 'tis blood, innocent blood, that hath lain in clodds congealed at my Romaine this full 7 yeers; haake how lowd it cries for vengeance? I never felt it before I came to Sirafford, onely once since, at Canterbury; O Tomkins, O Chaboner, Barle, &c. too well I understand that you suffered by my cruelty unjust deaths.  
Nurse. 'Tis well tis up; cast againe Mist'ris.  
Mrs.



After the text was printed on a single sheet of paper, these pamphlets were made by folding the printed sheet of paper into four parts, trimming the edges, and stab-stitching the folds together to produce a slim volume. To keep these brief books, owners would bind them together in a *sammelbände*, with similarly-sized or thematically-related materials, and store them in their personal libraries. But political print ephemera were also discarded, used for scrap paper, or repurposed as toilet tissue, a trend “Bum Fodder” and other ballads affirm in their verses. These short-lived pamphlets recorded the news: the day-to-day events of a nation at war with itself, the debates in Parliament and among the troops, the grievances of the capital and the countryside. Reaching beyond the journalistic present, some *Mercurii* imagined scenes—like the birth of a child of reformation—to distinguish themselves in the crowded market and perhaps avoid an excremental fate.<sup>6</sup>



For *Melancholicus*, literary visions of bad futures were a potent polemical tool. Would you want a Child of Reformation transforming your nation? Royalist news writers perpetuated this subgenre of speculative political writing by dramatizing other abhorrent (to them) political futures where Oliver Cromwell became King of England and prominent members of Parliament communed with demons. Unlike their Parliamentarian and sectarian counterparts, who actively promoted new models for political and social organization in their pamphlets and newsbooks, Royalist journalists were far more likely to use hyperbole, demonology, and other assorted scare tactics to decry these innovations. After all, they were promoting the status quo—a return to time-worn tradition, monarchical political organization, and the world as it should be rather than “the world turned upside down” imagined by their radical contemporaries. The *Mistress Parliament* plays document the adventures of Mistress Parliament, a grotesque feminized depiction of the corporate governmental institution. To inspire horror in loyal partisans Mistress Parliament, as we have already seen, gives birth to a monstrous reforming child in the first play, and in the subsequent issues she and her hellish offspring wreak havoc.<sup>7</sup>

The poem prefacing the play makes the portentous claim that “Our miseries then shall soon be past, / And our sick land be well” once the scourge of Mistress Parliament and her progeny are wiped from the land. The future is not only a political disaster allegorized through the dual vectors of monstrosity and misogyny, but it is sick, even nauseating. The tense birthing room of early modernity is a liminal space between life and death, between future progeny and past fertility. The only difference here is that the birth is something the text’s authors would rather avoid.

The future even sounds bad. Mistress Parliament I renders the violent noises and actions that accompany birth with onomatopoeic phrases and suggestive typography. When Mistress Parliament is nauseated she asks for a bowl to puke in and the text renders her vomiting with the exclamation:

} hawe } hawe. } ...

In between bouts of sickness Mistress Parliament and her attendants discuss her excretions of blood (the blood of the people she unjustly killed), choler or yellow bile (the gold she has taken from England’s citizens), and paper (the ordinances votes and declarations she has issued). Mistress Parliament’s suffering noises punctuate these exchanges. She {awe}.s, she {awe, awe}.s, and she Awe.....s sighing, heaving, vomiting, and giving birth. Her crimes are writ large in her raucous suffering: unjust executions, widespread theft, and paper-pushing reform.<sup>8</sup>

Only when I carefully examined the original printed texts of these plays did I notice the repulsive and explosive typography that accompanies Mistress Parliament’s monstrous labor. Because of my training as a literary scholar, I think a lot about how genre, form, and typography affect both early modern and twenty-first century readers. Mistress Parliament’s onomatopoeic and typographic nausea raises the question: How does this visually complex and comically scatological typography affect readers? As a reader who also rejects the rise of Parliamentary power, do you wretch along with Mistress Parliament out of horror at the assembly’s advances? Do you laugh? Are you repulsed enough by her to actively engage in ongoing political conflict in a new way? Do you feel reassured in your



These are but slips occasioned by the  
 in and make her a *Spirit* all Cawdle to co  
 for I promise you, I doubt that she will b  
 on't. Mrs. Parliament; why Mrs. Parli  
 ye Mrs. Parliament; Will ye have a litt  
 Cawdle to comfort ye?  
 Mr. Par. Oh sick, sick; I must cast  
 bowle: } hawe } hawe. } ....  
 Nurse. Well said Mistris, fetch it up; w  
 me! What is't that looks so red Mistris  
 Mrs. Parl. Oh 'tis Blood, innocent bl  
 clodds congealed at my stomack this fu  
 lowd it cryes for vengeance? I never fe  
 Sirafford, onely once since

} hawe } hawe. } ....

Well said Mistris, fetch it up;  
 What is't that looks so red Mistris?  
 Parl. Oh 'tis Blood, innocent blood, tha  
 congealed at my stomack this full 7 years  
 cryes for vengeance? I never felt it befo  
 onely once since, at Carterbury; O  
 Exiles, &c. too well I understand that y  
 y unjust deaths. { awe. }  
 'Tis well tis up; cast againe Mistris.

{ awe. }

(s)  
 I will Nurse. { awe, awe. } Oh, Oh, my  
 Mistris, What is't that looks so yelle  
 o Nurse, 'tis Gold, aecursed gold; For  
 God, my King, my Soul, committed  
 I manner of mischief. Awe...  
 that looks like Paper?

{ awe, awe. }

fe. { awe, awe. } Oh, Oh, my heart is  
 What is't that looks so yellow? is it  
 tis Gold, aecursed gold; For the love of  
 King, my Soul, committed Sacriledge,  
 of mischief. Awe... ..  
 that looks like Paper?  
 these are Ordinances, Votes, and De  
 back hard Nurse, my heart will  
 awe, sick sick.  
 comes so strongly up? Foh, how it

} Awe.....

anner of mischief. Awe  
 tis Mrs. that looks like Paper?  
 Nurse, these are Ordinances, V  
 old my back hard Nurse,  
 awe, awe, sick sick.  
 is that comes so strongly up  
 come over.  
 Nurse! This is the accursed I  
 tis the Gold, aecursed gold

awe, awe, sick sick.

positions? Do you buy the sequel? Do you use this slim book as toilet tissue and return to more serious pursuits? Or do you take up arms and try to prevent the birth of this hideous disaster of reform? What actions might reading this extravagantly political play motivate?

Of course, after all the *aweing* and *hawing* the birth itself is still delayed a few pages. In the midst of her labor, Mistris Parliament composes a declaration confessing her many crimes—from perjuring her “Oath of Allegiance” to the crown to stealing the nation’s property “by the instigation of the Devil, and against the Lawes of our Sovereign Lord King CHARLES.” Worst of all, perhaps, is her confession of topsy-turvy logic: “Instead of Reforming I have Deformed and in stead of repairing I have pulled down; Which hath occasioned all these miseries to fall upon me.” But after all this writing, witnessing, praying, and confessing, the child is born:

Whils’t she was speaking the room was strangely overspread with darkness, the candles went out of themselves, and there was smelt noisome smells, and heard terrible thunderings intermix’d with wawling of Catts, howling of Doggs, and harking of Wolves against the windows flew ill boading screech-Owles, Ravens and other ominous Birds of night, that strook a great terror to the hearers; at the same time Mrs. Parliament, was miraculously delivered of a Monster of a deformed shape, without a head great goggle eyes, bloody hands growing out of both sides of its devouring panch, under the belly hung a large bagge, and the feet are like the feet of a Beare.

This unruly child, part-human and part-beast, enters the world ready to “devour” all before it. Beyond the horror of her typographically-marked sounds, Parliament’s progeny is poised to disrupt the nation even more than its monstrous mother’s thefts and reforms. Playing into pervasive tropes of misogyny and biology, the monstrous child will continue Parliament’s work, thus rendering the state unrecognizable to Royalists like *Melancholicus*. By perpetually reconfiguring and undermining conventional structures of governance and rule, the babe of grace will destroy the churches,

assemblies, and courts that *Melancholicus* hopes to restore.

From the teeming multitudes embodied in Mistris Parliament—a female body representing the people of the nation, full of paper and gold, defined by blood and womb—a lone child harboring a singular future is born. It is part human, part monster, and all ideology. This is monstrous news.

“How ugly will it appear in the Chronicles of after times?” *Melancholicus* wonders at the end of the play. How ugly, indeed. The hawing and vomiting that accompany the birth of a monstrous future may fade, but its echoes linger in the archive. Mistris Parliament’s {awe.}s are still ugly, though perhaps differently ugly than *Melancholicus* intended.



## Notes

1. Julie Crawford’s *Marvellous Protestantism* is a detailed study of monstrous birth narratives in early modern England. Katherine Romack’s discussion of the *Mistris Parliament* plays in particular focuses on women’s political speech in the era.

2. I agree with D.F. McKenzie’s analysis that more short books were being published using a consistent number of established presses and steady volume of imported paper. And while this boom in printing was surely not caused by politics alone, I also find Peacey’s evidence for a changing politically engaged readership compelling as these short books needed readers to be commercially successful publishing ventures.

It is easy to talk about a neat opposition between Royalists and Parliamentarians, but of course the political positions of individuals were far more complicated. Political historians note a broad consensus of Constitutional Royalists and loyalists who were interested in Parliament’s reforms, but were deeply opposed to the trial and later execution of Charles.

3. Lois Potter’s editorial work on the series illuminates their topical references and textual history. Unfortunately this is not a very accessible scholar-

ly edition as it was published in an academic journal, rather than issued by a trade press.

4. Marcus Nevitt's recent work considers the dual role of the poet journalist.

It is notoriously difficult to determine exactly who was writing individual issues between the constant turn-over of authors and the proliferation of counterfeit issues of individual *Mercurii*. The *Mistris Parliament* plays may have been truly collaborative efforts as Lois Potter suggests.

5. In this piece, and elsewhere, I call these plays newsbook plays, rather than playlets, play pamphlets, pamphlet plays, or dialogues to call attention to their "Mercury" titles.

6. Printing *Mistris Parliament* I only required one sheet of paper. Other newsbook plays, newsbooks, and pamphlets occasionally required a second sheet or half sheet.

7. Other newsbook plays with future visions appeared under *Melancholicus* including *Craftie Cromwell* I.

8. To emphasize *Mistris Parliament*'s awing and hawing, the authors and compositors in the print shop used both onomatopoeia and expressive typography. Expressive typography describes the non-lexical features of a text including punctuation and formatting. I think that this is an especially innovative tactic for representing action in a printed play written in an era when public performance was banned. In her study of expressive typography and playbook design Claire M.L. Bourne argues that the printed editions of Ben Jonson's humorous comical satires use long dashes to encode bodily excesses and performative gestures.

All this bookish vomiting might sound familiar. The monstrous Error from Book I of Edmund Spenser's *Faerie Queene* expels books and ink.

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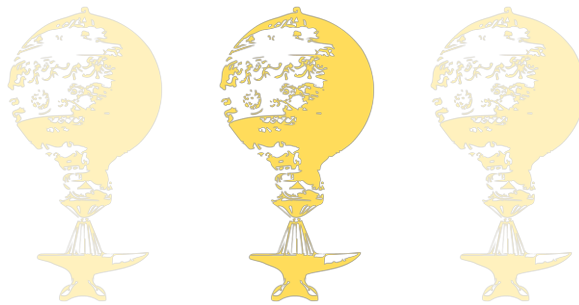
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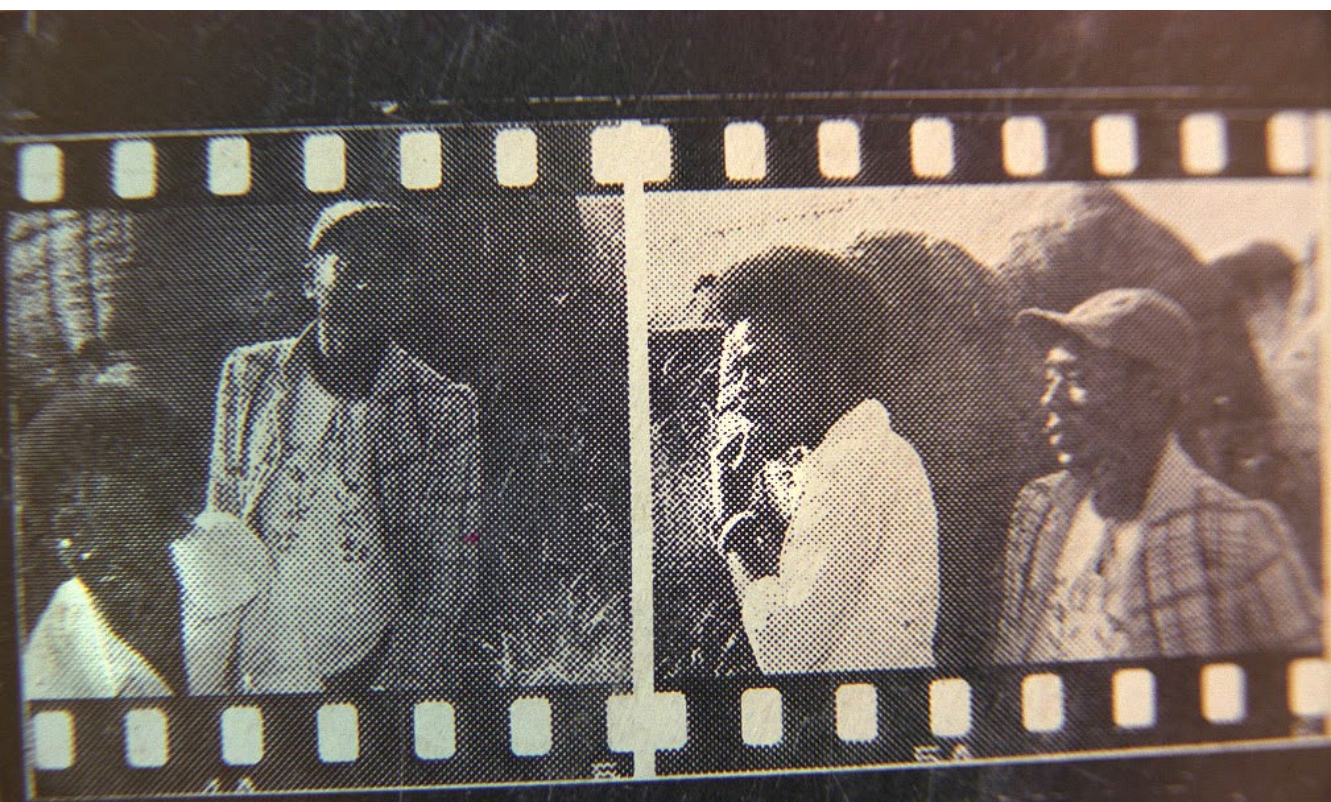
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CHAPTER TWO:

# Futures Past





Jagari Chanda (left), vocalist for the Witch, the biggest rock band in Zambia. Photos circa late-1970s.

## We're a Zambian Band

by Chris A. Smith

The drunks at Mindolo Dam rouse themselves at our approach. A teenager in swim trunks and a sun-bleached T-shirt puts down his plastic cup and unlocks the gate. He regards us with blood-shot eyes. "Morning, boss," he says, angling for a tip.

It's a Sunday morning in Kitwe, a colonial-era mining town in Zambia's Copperbelt. Clouds hang low, and the air is hazy. In the countryside, farmers are burning their fields in preparation for the rainy season. We've come to this recreation area to see an important part of the country's musical history.

Emanuel "Jagari" Chanda hops out of a truck. Once upon a time, he was the country's biggest rock star. As one of the founders of the "Zamrock" psychedelic rock scene of the 1970s, Jagari (an Africanization of Mick Jagger) was a household

name. His songs were radio staples, groupies mobbed him, he always drank for free. Now sixty-plus years of age, he's lost the Afro and gained a few pounds, but he retains a youthful, loose-limbed gait.

The recreation area sits on the edge of a manmade lake, and it's a gently-ruined place. Jagari strides toward the water, past worn picnic tables and fire pits. Beyond the water lie the copper mines that power this central African country's economy, open-cut gashes in the earth surrounded by heavily-rutted roads and streams running with mine tailings. Jagari grew up around here. He takes it all in, a dethroned king surveying his lost kingdom. "It's rundown, as you can see," he says. "Back then it was new."

As singer for the Witch, the biggest Zamrock band, Jagari played to packed stadiums and toured

across southern Africa. This recreation area was always one of his favorite venues. Often the band played from a stage backed up to the lake. The crowd—miners, soldiers, office workers, students—caught fish, barbecued, drank, and danced. Sometimes the Witch played at night, other times in the afternoon, the show peaking as the sun set over the Copperbelt.

Jagari says, “There was a kind of magic here.”



I first heard the Witch in 2008, via an mp3 blog dedicated to obscure African sounds. The music was incendiary, all crystalline guitar lines and supple rhythms, topped by Jagari’s plaintive voice. The recordings were rife with the pop and hiss of old vinyl; sometimes the music hiccupped, slurring for a moment. This only intensified the thrill of discovery. I found a few more bootlegs online, which confirmed my initial impression: something special went down in Zambia in the 1970s.

At the time, though, reliable information about either the music or the men who made it was hard to come by. How did Zamrock get started in the first place? Sub-Saharan Africa, after all, isn’t really known for its guitar rock. And where were all the musicians now?

Zamrock was the energetic sound of a nation that had just thrown off the British colonial yoke. Though Zambia is now one of the poorest countries in the world, at independence it had the second highest GDP on the continent thanks to its copper industry. Zambians expected great things—prosperity, modernization, and equal standing with the West. With fuzzed-out guitars, propulsive beats, and cosmopolitan outlook, Zamrock provided the soundtrack to this hoped-for future.

That future never arrived. Instead the country was brought low by a series of crises, external and internal, that would render it a ward of the international community by the 1980s. The Zamrock scene, devastated by economic collapse, the AIDS epidemic, and changing musical trends, withered and died.



Jagari Chanda at Mindolo Dam, 2010.

Chris A. Smith



The Mindolo Dam recreation area in 2010.

Chris A. Smith

As for Jagari, I read that he was still alive, but it was hard to say anything else for certain. One report had him working as a foreman at a uranium mine; in another, he was a youth music mentor. A Europe-based musician who had met him emailed me a warning. “Watch out for Jagari,” he wrote. “He can be a bit of a hustler sometimes.” It wasn’t much to go on—from America I couldn’t find a phone number or an email address for him. There was only one way: a friend and I decided to travel to Zambia to track him down.

The man we found, in 2010, had cycled through many lives since his rockstar days. He had been a music teacher, gone to prison for smuggling Quaaludes—a crime he insists he didn’t com-

To listen to the Witch perform “Havoc”, visit:  
<http://appendic.es/m/1p>





The Witch in concert at Matero stadium, Lusaka, 1974.  
Times of Zambia

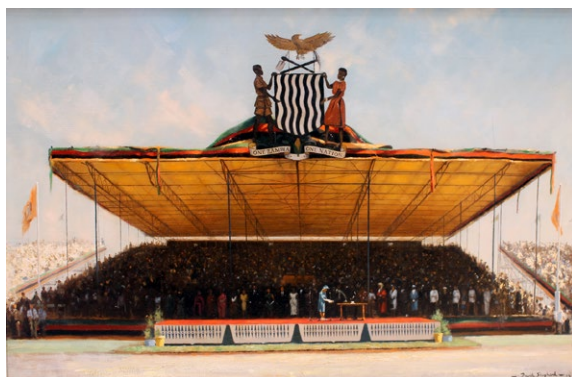
mit—and found God. Eventually he became a gemstone miner, sleeping in a tent and working an open-pit mine near the Congolese border. A modern-day 49er, Jagari hoped a big score would be his ticket back into the music business.

When we met him, Jagari was unknown outside Zambia, and largely forgotten even in his own country. Since then, improbably enough, he has achieved some of the international fame that eluded him the first time around—a degree of vindication for the lost years.

At the recreation area, we walk down to a weathered dock, the drunk teenager trailing us. As we pose for photos, the kid strips off his shirt and jumps into the dark water. He paddles around self-consciously for a few minutes, as if giving a performance. Jagari ignores him. “It’s like I died and was resurrected,” he says. “That’s how I feel coming here.”



Just before midnight on October 24, 1964, the drummers stopped drumming, the lionskin dancers ceased dancing, and all went silent. Then, at precisely 12:01 a.m., the Union Jack was lowered and the Zambian flag rose over Independence Stadium in Lusaka, the capital. Fireworks arced



A 1964 painting of the inauguration of Kenneth Kuanda, first president of post-liberation Zambia, by David Shepherd.  
Lusaka National Museum



Lusaka in the early independence years.  
Steve and Jill Moorey

through the sky, and the crowd roared. The old order was dead.

Later that day, Kenneth Kaunda, a socialist and former teacher who had canvassed support for the struggle by playing “freedom songs” on his guitar, was sworn in as president. Speaking to a crowd of 200,000, Kaunda acknowledged the sacrifices of those who had fought. Independence hadn’t come bloodlessly—security forces had shot, tortured, and imprisoned hundreds—but there were sunny days ahead. He urged his fellow citizens to “rise and march forward to peace, progress, and human development and dignity.”

Zambians had reason to feel good about the future. Just three hours before independence, the government had negotiated a more equitable stake in its copper mines—which at the time provided 90 percent of the country’s foreign exchange—with the British company that had owned them since the late 1800s. Kaunda embarked on an ambitious nation-building campaign, constructing schools and training a black African professional class. The need was acute: at independence Zambia had fewer than 100 native-born college graduates.

With the copper profits rolling in, however, nothing seemed out of reach. While Zambia’s rural areas were undeveloped, the *New York Times* noted in 1964, its main cities were “among the most modern in Africa, with shiny, airy public buildings that many Americans and Europeans might envy.”

The Copperbelt was especially prosperous; as more black Zambians rose through the ranks, miners bought pricey suits, new cars, and Western-style houses. Photos from 1963 show the first black Africans, employees of Roan Antelope mine, in Luanshya, to move into a previously all-white neighborhood. The images carry a whiff of suburbia: housewives pose next to gleaming stoves; a man in shirtsleeves mows his tidy lawn. Simon Zukas, a liberation hero and former Member of Parliament, remembers the euphoria of the time. “There was great optimism,” he says. “The first few years were very good.”

Jagari came of age during this heady era, a member of the first generation of Zambians to grow up more urban than rural. Though born in a north-

ern village, he was raised in the rapidly-growing Copperbelt by a brother who worked as a foreman in the mines. Middle-class by Zambian standards, Jagari attended high school, went to nightclubs as well as traditional township bars, and listened to the latest foreign records at a downtown music store. Indeed, the globalizing forces that brought the ideas of Marx and Fanon to inland Africa also brought the sounds of the British Invasion. To young Zambians like Jagari, the Fender Stratocaster was the sound of modernity.



The original cover of the Witch’s first LP, *Introduction*, released in 1972.

[Psychedelic Baby Blog](#)

The oddest—and, in a way, most poignant—manifestation of this optimism was the Zambian space program. In 1964, Edward Makuka Nkoloso, an elementary school science teacher, appointed himself chief of newly independent Zambia’s National Academy of Science, Space Research and Philosophy. There was no such academy, but he began recruiting astronauts for a trip to Mars anyway. As his charges trained by rolling down hills in oil drums and walking on their hands, he boasted to reporters that Zambia would beat both America and the Soviets to Mars. He was roundly mocked, but there was also something noble about the effort. The artist Christina De Middel, in a recent photo and film project, reimagines Nkoloso’s obsession.

By the late 1960s there were dozens of rock groups scattered throughout Lusaka and the Copperbelt. Some of these bands just imitated their Western idols, but the best of them mixed the pop sensibilities of the Beatles, the fuzz guitars of Cream, and indigenous *kalindula* rhythms, creating something distinctly Zambian. There were standard-issue tunes of broken hearts, but other songs displayed a profoundly non-Western take on the world. A band named Amanaz, singing in one of Zambia's seventy-two different languages, charted the continent's journey from slavery to independence. Paul Ngozi sang of the nightmares he endured after renting a house next to a graveyard.

The Witch, an acronym for "We Intend to Cause Havoc," was the most popular band in the country. Along with another pioneering group, Rikki Ililonga's Musi-O-Tunya, they forged the path that others would follow. As Eothen Alapatt, who runs Now-Again records in Los Angeles and has reissued a host of Zamrock albums, puts it, the two bands were "the scene godfathers, the inspiration for them all."

Jagari joined the Witch in 1971, while he was still in high school. His older brother disapproved—"rock star" was no career for an educated Zambian—so he ran away from home. He finished high school but never looked back. The

band's first two albums, with simple-but-catchy songs and one-take production values, were hits. It wasn't until the third album, 1975's *Lazy Bones*, that the Witch hit its stride. Driving and often dark, with melancholy melodies and acid-laced guitar playing, the album sold 7,000 copies its first week—huge numbers for the place and time. Alapatt calls it "a masterpiece—not just of Zamrock, but of psychedelic rock in general."

The band's live shows, meanwhile, became the stuff of legend. While the band vamped behind him, Jagari jumped into the crowd from balconies, gyrated like a dervish, screamed or sang as the spirit took him. Shows often went for six hours or more. Typically, they began with an hour of instrumentals followed by a few cover songs—"Sympathy for the Devil," maybe, or Grand Funk Railroad's "We're an American Band." Jagari modified the lyrics to that one: "We called it 'We're a Zambian band.' People liked it that way." Some nights, the crowd demanded to hear the band's hit songs two or three times over.

Soon the Witch was headlining stadiums across the country. Errol Hickey, the former chairperson of Lusaka's Radio Phoenix, Zambia's only independent station, says, "Those were the only places that could hold them—they could draw a couple of thousand people, easy."

In some ways, the Zambian rockers were similar to their Western counterparts. Sporting luxuriant Afros, platform boots and voluminous bellbottoms, Zamrockers defied the prevailing conservative attitudes. Sometimes the Witch went onstage with artfully torn clothing, or women's underwear over their jeans. Keith Kabwe, who sang for Amanaz and is now a Pentecostal pastor, wore a skeleton costume and jumped out of a coffin onstage, a la Screamin' Jay Hawkins.

Such antics occasionally got them into trouble. One October evening in 1974, the Witch was playing a show in a tony Lusaka neighborhood when the police showed up. The Minister of Home Affairs, no rock 'n' roll fan, lived nearby. Jagari and



The cover of *Lazy Bones*.  
Now-Again

To listen to "Chifundo" by the Witch, which has more of an "ethno-rock" sound, visit:  
<http://appendic.es/m/1m>



his bandmates were charged with “noisemaking to annoyance” and thrown into Kamwala prison for three days.

Alcohol and drugs, meanwhile, were everywhere. Some used speed and acid, but weed was by far the most common drug. Jagari says he drank a bit but otherwise abstained. Others indulged. “We smoked,” Kabwe says, laughing. “We smoked a lot! There was hard stuff here. Once you’d pull it, you’d be seeing things.”

And then there were the women. In Ndola, the administrative capital of the Copperbelt, I meet a teacher who tells me that she grew up going to Witch shows. Her best friend, she adds, once dated Jagari—“he was so crazy.” When I mention the woman to Jagari, he says he doesn’t remember her, but he’s not surprised. “Everybody had groupies.”

Even at the best of times it wasn’t a lucrative life. Instruments were expensive and royalties low. A Copperbelt record label, Edward Khuzwayo’s Music Parlour, was known for treating bands fairly, but that was the exception. As Wayne Barnes, who played guitar for Musi-O-Tunya, recalls in an interview with Alapatt, “There were some really shady whites running nearly all the record companies in Africa.”

Still, Jagari got by. The band toured constantly, from Botswana to Kenya—in Malawi, they received a police escort on the way to a concert for the local diplomatic corps. They recorded two more albums of increasing sophistication, which incorporated strong African and Latin elements. The years passed, and Jagari dared to dream of more—London, New York, Los Angeles.



For more than three decades, Malawi was ruled by the authoritarian and comically conservative Hastings Banda, who forbid women to wear pants and men to wear long hair or beards. The edict applied to foreigners as well: Banda’s border guards were notorious for giving male travelers forcible haircuts. When the Witch crossed into Malawi, Jagari says they pinned their Afros down and tucked their bellbottoms into their socks. They got away with it.



Rikki Ililonga, one of the founders of Zamrock, performing live in the early 1970s.  
*The Cosmic Clash*

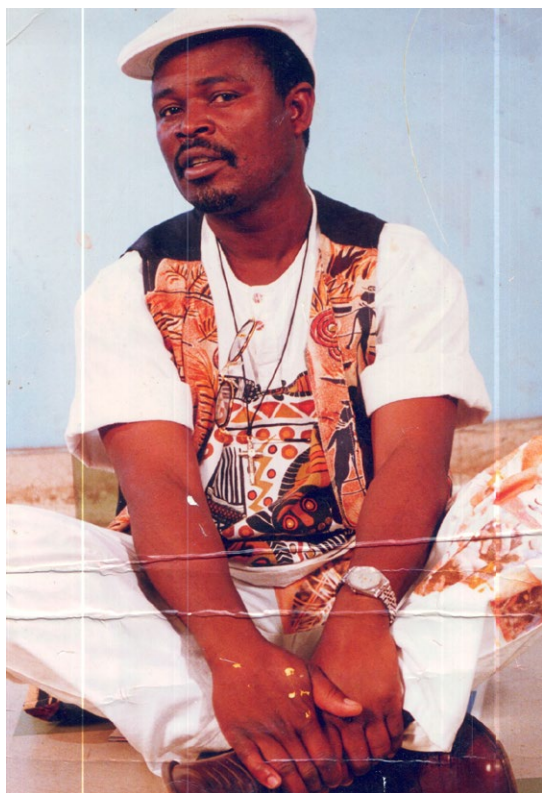


The band’s touring van (seen here in Malawi, in 1975) became famous in its own right. The Lusaka music journalist Felix Nyambe remembers, “If you saw that van, you knew the Witch was in town.”  
*Psychedelic Baby Blog / Jagari Chanda*

Zambia's golden years didn't last. By the late 1970s the price of copper had plummeted. Inflation spiked, and the mines slashed their workforces. There were lines for bread, shortages of salt. The government had nationalized the mines, and it proved disastrous. To pay off its creditors, Zambia borrowed more. The economic death spiral tightened.

Meanwhile, there was chaos on the borders. Mozambique and Angola were fighting civil wars, and black rebels in Rhodesia, Zambia's southern twin under colonial rule, were engaged in an insurgency against the white government. Zambia, which sheltered Zimbabwean and South African guerrillas, suffered under curfews and blackouts, its power stations bombed by the apartheid state's security forces. While Kaunda's government foiled a coup attempt in 1980, an uprising in the coun-

*The Musakanya Papers*, edited by Miles Larmer, compiles the writings of a Zambian politician who may or may not have been involved in the coup. It offers a thorough rundown of all the ways in which Zambia's post-independence government went to hell.



Jagari circa 1990s.  
Courtesy of Jagari Chanda

try's remote northwest simmered for years. Led by an ex-game warden named Adamson Mushala, the rebels burned villages and press-ganged children into service. People said Mushala could render himself invisible, and shape-shift into a giant bird. More credible were the reports of his South African backing.

In response to these pressures, the once-progressive liberation government turned increasingly authoritarian. It wasn't a dictatorship, exactly, but you had to watch your step. Informers were everywhere. As Hickey puts it, "If you said 'Kaunda is shit' you'd go into jail for a few years."

For the Zamrockers, it was all bad news. The curfew reduced bands to playing "tea-time" shows, which greatly limited their audience. Tastes were changing, too, as disco and Congolese rumba began to supplant rock as the new sound of urban Zambia. Finally, piracy was on the rise; bootleggers copied Zamrock albums in Nairobi then sold them throughout Zambia.

It had never been easy to be a fulltime rock musician in Zambia. Now, with little money to record or tour, it was almost impossible. Jagari bailed out. He had just married his wife, Grace, and they were starting a family. In 1980 he landed a job teaching music at a Lusaka college (He would go on to major in music and English). He spent the next years studying and working to support his growing family.

Jagari was lucky in one respect. He got out just before AIDS decimated the Zamrock community. One by one, his former bandmates succumbed to the virus—the last on Christmas Eve in 2001. "Musicians in Zambia are very careless with life," says his wife Grace. "Jagari's not better than the ones who died. He could have been gone as well."

In 1993, though, things went horribly wrong. Jagari was arrested and charged with trying to pick up a shipment of Mandrax (the southern African name for Quaaludes) from India at the Lusaka airport. He denies having any knowledge of the illegal drugs in the boxes; acquaintances tricked him, he says, into letting them use his ID. "I have never even been to India," he says. The judge didn't buy

it, and sentenced him to a couple of years in prison.

When he emerged from prison he was broke and pushing 50. He had lost both his job and his home. Gradually, he found a new path. He became a born-again Christian, giving up alcohol and womanizing. As much as he loved making music, it seemed out of the question—he needed money. “Maybe God is saying something to me,” he thought. “Maybe it was my turning point to do other things.”

He became a miner.



Zambia is the size of Texas, with a population of 14 million. As we touched down in Lusaka, the capital, in 2010, we worried that we wouldn't be able to find Jagari.

We needn't have. Within a day of our arrival we were sitting across a table from Jagari's oldest son, Dale, who we had found through a mutual acquaintance. The son of a woman Jagari dated in the 1970s, Dale was an easy-talking 32-year-old who had worked as a traveling salesman, a gemstone miner and seller, and a political campaigner. He hadn't really known his father as a child; the two reconnected after Dale, then 18, read a newspaper article in which Jagari said, “I don't know where my son is, but I love him.”

Dale informs us that his dad is “in the bush” at his open-pit mine in Mansa, in the red-dirt highlands along the Congo border. Gemstone mining is a common occupation in Zambia. While the country's organized mining business is the province of multinationals and parastatals, tens of thousands of Zambians lease small digging concessions from the government, scratching out a living with shovels and sweat. The area around Mansa is rich in citrine, amethyst, and black tourmaline. Jagari and two Senegalese business partners had been working their plot for about a decade. They hadn't yet struck it rich. Hope, as they say, springs eternal.

A plan comes together: Jagari will take a minibus to meet us in Kitwe, the Copperbelt city where he



The Copperbelt in 2010.  
Chris A. Smith

grew up. I give Dale money to wire to his dad for bus fare, even though we're not sure yet if Dale's for real. He's already floated the idea of a joint real estate deal; it's possible that he's conning us clueless *mzungu* (“white people”). He speaks movingly, however, of his relationship with Jagari, and of his desire for his father to get the recognition that he deserves.

The next morning, we pile into a rented pickup truck and drive the 200-plus miles to Kitwe. The Copperbelt road, a narrow stretch of tarmac punctuated by small roadside settlements, is mostly empty. There are occasional checkpoints; they provide opportunities, Dale explains, for poorly paid cops to extract bribes from minibus passengers. Every so often, an 18-wheeler carrying oil to the mines appears on the horizon. Other cars pull to the roadside like submissive dogs, huddled against the force of the rig's passage.

We meet Jagari at an upscale miner's bar that evening. Dressed in a leather bomber jacket and a baseball cap, he looks more like a suburban dad than a rock star. But the magnetism that once captivated audiences seems to be intact. He flirts with the waitress, a sly smile on his face, and as the DJ plays auto-tuned hip hop he recounts his life story. A group of younger Zambian guys gathers at the other end of the table. They haven't heard of him, but one guy leans in, listening raptly. He yells over the music: “Respect!”





A few days later I meet Jagari in downtown Lusaka, a sprawling city that makes up for in friendliness what it lacks in organization. He arrives in an old Japanese car, wearing an oversize white tunic and matching pants. Markers of the gemstone business are strewn about the car. A bag of citrines sits in the console between the seats; he has an appointment later to get them cut and polished. We drive around, listening to the Hollies.

The sidewalk outside the public library is crowded with men doing gemstone deals, coming together to negotiate and then breaking apart to mutter into their cellphones. Some of the stones were mined legally; some certainly were not. Overall, Zambia's economy is booming, buoyed by the mines and Chinese investment. Apartment blocks and mega-malls are rising all across Lusaka, but there are few new jobs. Sixty-four percent of Zambians still live below the poverty line; more than 80 percent work in the "informal" economy.

I ask Jagari about the Witch's legacy. He reminisces about the time they opened a show for British-Ghanaian Afro-rockers Osibisa. With more ambition and business savvy, he muses, perhaps the Witch could have gone international—a Zambian Osibisa. But they were too comfortable being big fish in a small pond. "We never took the risks."

While he plays occasional oldies gigs, Jagari still dreams of getting back into music full-time. If he can find the money, he'd like to open a music school and a recording studio. "That's why I go into the bush to look for stones."

At noon, we take the elevator up to the eleventh floor at Radio Phoenix. Errol Hickey, the station's former chairperson, has arranged for us to appear on a national radio show. As Jagari tunes his guitar, the host, a young guy named Luchi, tells me that he hadn't heard the Witch until now.

On-air, Jagari plays a few Witch classics. His voice is raspy, weathered by the years. Near the end, he launches into a song called "It's Alright." It's a

love song, but today it ends up sounding more like a statement of defiance.

Oh, my baby, I never thought you'd come back my way.

All this time, I've been waiting for you to come back my way.

But baby it's alright.

Baby, it's alright.

Listeners call in to speak to Jagari. One says he saw him perform at Mindolo Dam. Another asks about a comeback: when will he start playing out again? "Give me kwacha [the Zambian unit of currency], man, to organize the shows," Jagari replies. "And I'll be there."



I left Zambia the next day. Back home in San Francisco, I wrote a couple of articles about Zamrock and kept in occasional touch with Jagari. I never expected to see him again; Lusaka is a long way from California.

Over the next few years, though, Jagari's star began to rise. Ben Phiri, a journalist from Ndola who has written more than 70 columns on Zamrock for the *Times of Zambia*, says that young Zambians are "slowly awakening" to their rock 'n' roll heritage. "They marvel when they listen to Zamrock. They think Zambians could not have done that."

Meanwhile, Alapatt's Los Angeles record label, Now-Again, kept pumping out Zamrock reissues. In 2011, he arranged for Jagari to speak at a music conference in Madrid. The following year, Jagari played two well-received shows in France with fellow Zamrock survivor Rikki Ililonga. There was a Chinese documentary film, and a South African one is due for release this year. Bit by bit, Jagari's profile grew. I was happy for him: at long last he was getting some of the recognition that had escaped him in his youth.

Then, one morning last spring, I woke to the news that he was coming to America.



For an excerpt of our interview and Jagari's performance, visit:

<http://appendic.es/m/1o>

The first Zamrock concert in North America takes place in Los Angeles in May 2013, and is followed by another in San Francisco in June. For both shows Jagari is backed by a crack group of LA jazz-funk musicians. Billed as “Zamrock Live!” the LA show is a private concert at a Hollywood art space. The crowd is small but appreciative, and it is wonderful and a little surreal to see Jagari on an American stage, roughly 10,000 miles from where I last saw him. We embrace like old friends after the show.

In San Francisco, Jagari opens for the indie beat-maker and DJ Madlib, and the nightclub is packed. Most of the crowd probably doesn’t know who he is, but they go nuts anyway. In response, Jagari turns back the clock. He jumps and screams, flirts and teases, runs in place like Mick Jagger and duckwalks like Chuck Berry. The closer, “October Night”—a song about the band’s 1974 arrest for playing too loud—sprawls into a nine-minute, Latin-infused space jam. He exits the stage, and it feels like a triumph.

Backstage, Jagari chats with fans, still flush with adrenaline. I ask Alapatt if there are more shows in the works. He shakes his head. “This is it, man,” he says. “I don’t know how to get him back over here.” A number of African bands, of course, tour America regularly. The Malian desert-blues band Tinariwen, for example, whose members wear turbans and cultivate a sort of revolutionary chic, come through California just about every year. Jagari’s music and image, though, isn’t nearly so exotic—he mostly sings in English, and mostly plays a recognizable form of rock ‘n’ roll. Discussing it later, Alapatt says, “Perhaps that just doesn’t fit with the modern booker’s idea of what music from this part of the world ‘should’ sound like.”

Jagari makes the most of his time here. He records some new songs, two of which Alapatt releases as a single: a 1960s-style pop number and a haunting adaptation of a traditional Zambian song about witchcraft. I spend some time playing tour guide in both cities. We eat burritos and drive out to the ocean, watch the surfers and take photos, debate the meaning of life and whether or not the members of Black Sabbath were Satanists (he says yes; I say no). He is philosophical about his late resurgence. “I had hoped for this much earlier,”

he says. “But that’s the human point of view. God saw it differently. He was grooming me for the challenge.”

On his last night in America, Jagari comes over to the apartment I share with my girlfriend. Grabbing my acoustic guitar, he gives us an impromptu lesson. Eyes shining, sweat beading on his forehead, he leans into the instrument, working the strings and singing in a soulful growl. “You should practice each skill until it is automatic,” he says, his fingers moving nimbly up and down the frets. He smiles and adds, “Then you are prepared for anything.”



To listen to Jagari’s new song “Kwamununga,” visit:  
<http://appendic.es/m/1n>



Twentieth-century Japanese visions of a future that never came to pass.  
Darkroastedblend.com

## Party Like It's 1999: Japanese Retrofuturism and Chrono Trigger

by Michael P. Williams

Like most of you reading this, my memory is imperfect.

I forget names, faces, and especially birthdays. Perhaps this is because much of the limited storage space in my hippocampus has been crowded by bits of pop culture trivia. The largest cohesive body of knowledge within this dubious archive is of the animated program *The Simpsons*—still on the air since its debut just a few weeks before 1990. In many ways, *The Simpsons* nurtured my web of associative thinking. I learned as much from the show's often highbrow references as I did from school curricula. So it was only natural that the show should be my cultural anchor when I started to consider the theme “Futures of the Past.”

My thoughts turned to the 1996 episode, “A Fish Called Selma,” in which Bart and Lisa's always-unlucky-in-love aunt Selma marries a washed-up 1970s actor, Troy McClure. McClure lives in a hexagonal UFO of a home—actually a repurposed aquarium supported by rickety beams. The house, like McClure's career, is falling apart, and is one broken support beam away from collapse. But humdrum Selma is starstruck. Upon crossing the threshold of her marital home, she is awed by the cheesy opulence. “It's so modern,” she remarks. “It's ultra modern, like living in the not-too-distant future.”

I find this same not-too-distant future wherever I see gravity-defying glass architectures, wherever Jetsonian disc-buildings hover precariously on





A screenshot from *Chrono Trigger* (1995).  
Nintendo

over-tall spires. The not-too-distant future is all around us, but some of it has already become the all-too-recent past.



I recently wrote a book about a videogame called *Chrono Trigger*, first released in Japanese for the Super Famicom game system in March 1995, and later that year in English for the Super Nintendo, the Super Famicom's blockier North American cousin. *Chrono Trigger* is a role-playing game about a disparate crew of heroes traveling through time to stop a cataclysm in the year "1999 AD." In the game's mythos, this year will mark the apocalyptic reemergence of legendary beast Lavos from the planet's core. The characters journey through time to save their world from destruction.

*Chrono Trigger* is a product of Japanese imaginations, and we might be tempted to read this apoc-

alyptic event as an analogue to natural disasters that have plagued the island nation. The most recent high-profile calamity was the tag-team manmade/natural disaster of March 11th, 2011. On that day, a tremendous earthquake triggered a coastline-devastating tsunami, which in turn surmounted the walls at Fukushima Daiichi Nuclear Power Plant, causing significant damage and a meltdown of half of the plant's reactors. This disaster was deeply palpable for me, a former resident of Fukushima with friends still living in the prefecture.

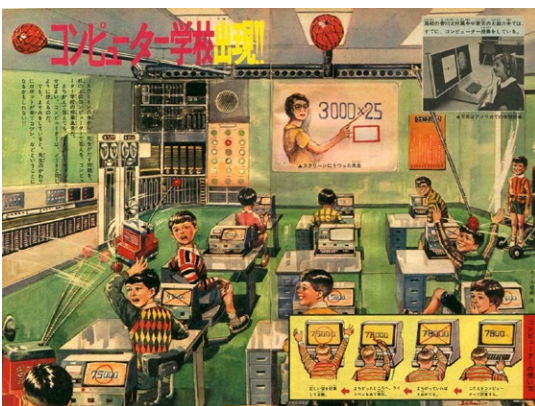
Before Lavos erupts and dooms the planet to perpetual nuclear winter by 2300 AD, the player gets a brief glimpse of that fateful year 1999 AD. Society has advanced considerably since the time period in which we begin the game—1000 AD, "the present." But the domed cities dotting the landscape where towns and castles once stood are made less fantastic by evidence of spreading desertification.



"The Tokyo of 2061" by Tenan Ito,  
in *Tanoshii Yonensei* (1961).  
*The Japan Times*



Reiji Iizuka (1936)



It is a subtle detail, and one not on screen long enough to permit most players—many of whom might be children and younger teenagers with more interest in gameplay than criticism—a close inspection.

Similarly, nuance isn't easy to come by in other 20th century Japanese visual renditions of the not-too-distant future, many of which were aimed at young readers. One striking vision of the future captioned "Tokyo in the Year 2061" features a panoply of classic science fiction tropes: hovecars, towering buildings with top-heavy platforms, smiling monoracial citizens in equally monochrome jumpsuits. There is nothing sinister here—except perhaps an instance of ghoulish pareidolia involving a grinning flying car—and indeed this image was published in a 1961 issue of a magazine called *Tanoshii Yonensei*, or "The Fun Fourth Grader."

This is far from the oldest Japanese juvenile future I've encountered. A 1936 survey of future transportation published in the magazine *Shōnen Kurabu* ("Boys Club") features a series of Japanese illustrations interpreting American and German inventions as part of a "World Transportation Invention Competition."

Some machines, like the "amazingly swift flying machine," still look revolutionary. Others, like the "sphere-wheeled car," seem like dead ends of vehicular evolution.

None of these curvilinear vehicles make an appearance in "Computopia," published in a 1969 issue of another boys' magazine, *Shōnen Sandē* ("Boys Sunday"). Instead the reader is treated to a transhumanist survey of the future of 20 years from then—that is, 1989. Boxy robot proctors patrol teacherless classrooms, bonking the noggins of children who input the incorrect answer on their computerminal desks.

Meanwhile at home, a bubblegum machine-like kitchen robot enacts mundane tasks, as a techni-

"For the purpose of maintaining order, the future classroom will come equipped with watchful robots that rap students on the head if they lose focus or act up," *Shonen Sunday*, 1969.

[Darkroastedblend.com](http://Darkroastedblend.com)





"Computer Life in 20 Years," *Shonen Sunday*, 1969.  
Pink Tentacle

color-jumpsuited Mom takes care of home economics on a punchcard calculator. Yes, there are silly bits, but there is also striking prescience—a surgeon performing a delicate heart transplant using a guided computer arm, a self-propelled vacuum scouring the floor for debris, and Dad chatting on a videophone. While none of these futures had come to pass by 1989, they would be implemented within the next two decades.

The early 1970s Japanese book series *Nazenani Gakushū Zukan* ("Whywhat Illustrated Encyclopedia for Learning") features more fantastical takes on possible futures and alternate presents. The volumes in the series juxtapose the realistic and the fantastic—a UFO whizzing past the Great Sphinx of Giza, or a giant dragonfly used as a rocket-powered airplane.

The volume which drew my attention was number 14, *Robots and Life in the Future* (*Robotto to Mirai no*

*Seikatsu*), published in 1973. Used copies are prohibitively expensive and difficult to have shipped from Japan, and no library in the United States seems to own this volume. I was, however, able to find a digital preview of its contents. The first section depicts what it calls a "bright future," where robots labor on moon colonies and humans zip from Tokyo to Osaka in one hour on a massive bullet train. The second, the "dark future," shows laser-armed robots revolting against their selfish human masters.

The final image of the dark future is a two page spread: the first shows a global ice age, with Tokyo Tower (or is it the Eiffel Tower?) drooping defeat- edly to the ground; the second depicts a series of transparent domes on a barren landscape, sus- taining both the ecosystems and the cityscapes within them under artificial sunlamps. While this book was undoubtedly designed to be read right to left, the decontextualization of these two pages



into one image shows a frightening synchronicity. These domed cities could just as easily pass for *Chrono Trigger*'s 1999 AD, and the wintry desolation for its 2300 AD. Here in the *Whywhat?* series, these dark futures are one and the same, separated only by the gutter of paginal transition.

Most of these original sources are difficult to find, and I do not doubt that many undiscovered gems are still buried within unindexed library-bound journals or the bins of Japanese used bookstores. The most fascinating thing about these images is not what they got right or what was way off, but rather that humans today are so captivated by them. The force that drives up the price of these collectibles—perhaps the very same quality that imbues them with collectibility in the first place—is nostalgia. Nostalgia for a past of which I wasn't a part. Nostalgia that imagined futures in which nostalgia for the past would become obsolete.



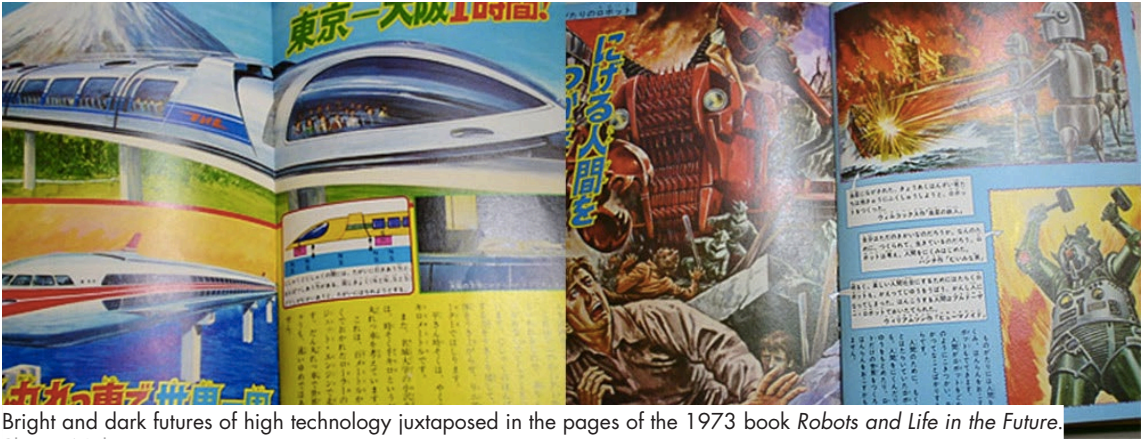
One element conspicuously lacking from mid-century Japanese visions of the future was play. Almost every character in these images is doomed to a sedentary lifestyle, and their activities are either productive of, or passively receptive to, information. There is nothing fun about Computopia.

Even Nintendo's mid-90s game system flops were futurist. The Virtual Boy, a system that aimed to be portable and to create virtual experiences, managed to fail on both accounts. Not only was this ViewMaster lookalike incredibly cumbersome, it was not even wearable—players had to place the device on a flat surface. Even worse, graphics generated by the device were only red and black, and rumors abounded of players developing severe headaches. Even with continuing discounts on its initially hefty price tag of \$180 in 1995 dollars—Toys “R” Us eventually started selling the system at \$25 after poor Christmas season sales—the Virtual Boy failed to attract an audience and was soon retired from production. Despite inspiring modern successors like the truly portable, stereoscopic Nintendo 3DS, the Virtual Boy was by most accounts a spectacular failure.

While 1995 was a disappointing year for Nintendo, it was a great one for Square, the publisher of *Chrono Trigger*. Debuting at \$80 in North America, the memory-heavy game was one of the most expensive Super Nintendo cartridges ever produced. Despite a retail price noticeably higher than other games on the market, *Chrono Trigger* became a worldwide bestseller. *Chrono Trigger*'s ultimate origins lie in a project codenamed Maru Island in development for a CD-ROM peripheral that would



Covers from the book series *Nazenani Gakushu Zukan*.  
Tsuchinokodo

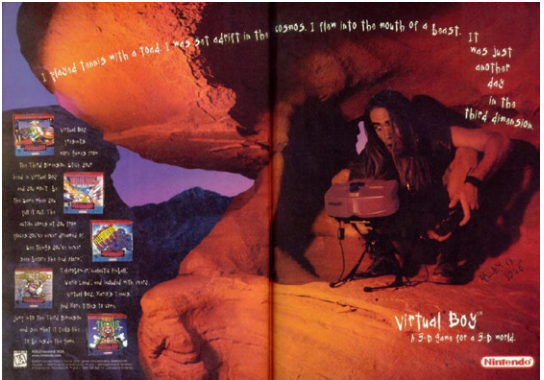


Bright and dark futures of high technology juxtaposed in the pages of the 1973 book *Robots and Life in the Future*.  
Showa Nabi

attach to the Japanese Super Famicom system underneath, alleviating the memory and data storage limits of the system's game cartridges. Although the CD-ROM add-on never materialized, its co-developer Sony would eventually use it as the basis for their Playstation system, whose entry into the gaming console market would disrupt the traditional Nintendo versus Sega dichotomy of home gaming. The leftovers of Maru Island would be repackaged as two distinct cartridge games with striking visual similarities: *Secret of Mana*, released in 1993; and *Chrono Trigger*, released in 1995.

Another stackable Super Famicom add-on was the rather successful Satellaview, a satellite modem launched in 1995 that could receive new game data as it was broadcast. Although the cost of the system and the monthly subscription fees were high, the system was successful—it enjoyed a five-year run before it was discontinued in 2000. The Satellaview is notable for demonstrating an early, if ultimately flawed, model of remotely distributing games.

The Satellaview was never released in North America, and the CD-ROM addition was a future that never came to be either. I can only imagine how ridiculous the angular gray chunk that was my Super Nintendo would look with two big peripheral boxes undergirding the lofty perch of the



A caveman-like Gen Xer discovers the three-dimensional wonders of the Virtual Boy, 1995.  
Nintendo Life



The Satellaview, launched in Japan in 1995.  
Wikimedia Commons

It is worth noting one of the Satellaview games was a sort of spinoff of *Chrono Trigger*. This text-based adventure, *Radical Dreamers*, would in turn later become the prototype to an official sequel to *Chrono Trigger*, *Chrono Cross*.



cartridge slot. The potential existence of this totem of cartridge worship in a world slowly trending toward optical discs strikes me as both foolish and sublimely quaint. It is an image perhaps best illustrated by a Japanese science fiction artist from the 1960s.



I had intended this article to be a way to talk about things that didn't find a place into my eponymous book on *Chrono Trigger*. In Japanese, this piece might be called a *gaiden*—a noncanonical sidestory. But I want to end with another *gaiden* to the story I've been trying to tell here—our collective failure to archive digital pasts.

Who will preserve outmoded technologies for posterity? Attempts to create videos of Virtual Boy gameplay are hampered by the inability to display the system's 3D technology as it existed—while anaglyphic images can be generated, and then viewed with red/cyan 3D glasses, these would not reflect the games as they were originally experienced. There are also few archives of the Satellaview's broadcasts, some of which included live narration—whether these exist somewhere in the vaults of Nintendo's headquarters in Kyoto is a matter of speculation. Concerned gamers, though, have archived many of the games that players downloaded, but this far from a complete snapshot of the compelling Satellaview content that kept Japanese players paying those monthly subscription fees.

It is in another staple of early 1990s futures of the past that I find an idealized, almost-perfect, archive of human achievement—*Star Trek: The Next Generation*. The all-knowing computer of the starship Enterprise could access and cross-reference data from all manners of polyglot sources, and could announce the compiled results in an even-tempered, clinical voice. But even this

near-omnipotent database couldn't fill in the blanks left by humans of pre-singularity eras. I have trouble accepting a disappointing truth of human progress—there are things that have been forgotten, and they will never be re-remembered.

There is no going back to the mid-twentieth century to snatch up copies of Japanese kids' magazines for preservation. There is no backwards journey to the 1990s to capture the ephemeral radio narration of Satellaview broadcasts. Our present is as imperfect as our past, and our future will carry this legacy onward.

Without Pink Tentacle—and by extension, without the *Showa no Zasshi Kokoku to Natsukashii Mono* ("Showa Era Magazine Advertisements and Nostalgic Stuff") the Japanese nostalgia blog that fueled these features—I would never have known about many of Japan's forecasts of the futures (now "pasts" and "presents" from alternate timelines). The only inroads to them come through gonzo bloggers and curators of the weird, who have prioritized discovery over copyright.





Humans have been playing with fire for a very long time.  
Giuseppe Arcimboldo, *Fire*, 1566,  
Kunsthistorisches Museum, Vienna  
(via Wikimedia Commons)

# Quests for Fire: Neanderthals and Science Fiction

by Lydia Pyne

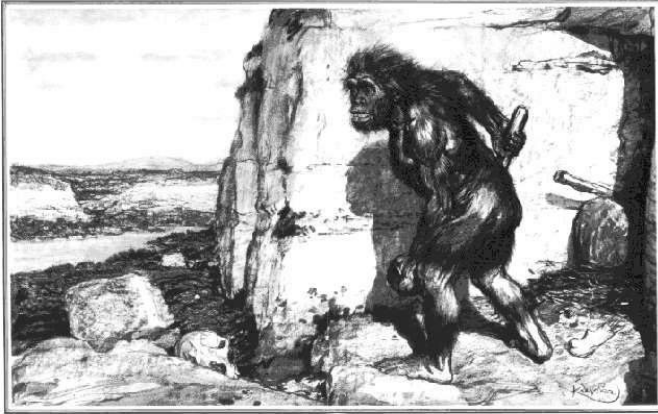
## The Quest Begins: Neanderthals Meet Science Fiction

In 1856, workers at a limestone quarry in the Neander Valley of Germany turned over a curious set of skeletal remains to a local amateur naturalist, Johann Carl Fuhlrott, who, in turn, delivered the bones to famed anatomist Hermann Schaffhausen. The bones, described as Neanderthal 1 (or *Homo neanderthalensis*), showed a species very much like our own—yet different enough in anatomical detail to warrant a new taxonomic designation. This new “almost-human” species offered the nascent discipline of paleoanthropology fantastic specimens for study, filling out the fossil re-

cord. Archaeological excavations began in earnest across Europe to recover more such fossils, particularly in southern France during the first decade of the twentieth century. These new sites yielded a plethora of Neanderthal fossils.

In 1908, Amadee Bouyssonie, Jean Bouyssonie, and L. Bardon published the results of their excavations at La Chapelle-aux-Saints, a cave site

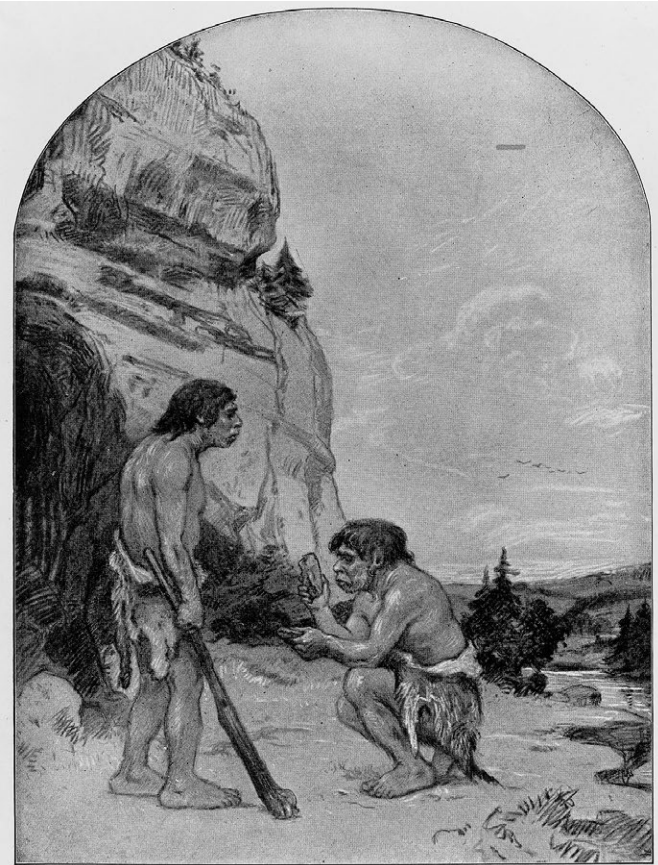
Several other Neanderthal fossils were recovered prior to 1856, but weren’t assigned a species-specific classification until the material from Neander Valley was published. After Neanderthal 1, the other specimens from Belgium and Gibraltar were classified as *Homo neanderthalensis*.



THE MAN OF LA CHAPELLE AND AROUND AN AGGRAVATED RECONSTRUCTION OF THE PROPHETIC CAVE MAN WHOSE SKULL WAS FOUND IN THE DEPARTMENT OF CORREZE

"An Ancestor: The Man of Twenty Thousand Years Ago,"  
by Franz Kupka

Amédée Bouyssonie, Jean Bouyssonie, and L. Bardon, "Découverte  
D'un Squelette Humain Moustérien À La Bouffia de La Chapelle-Aux-  
Saints (Corrèze)," *L'Anthropologie* 19 (1908): 513-18.



PL. I. Neanderthal man at the station of Le Moustier, overlooking the valley of the Vézère, Dordogne. Drawing by Charles R. Knight, under the direction of the author.

Charles Knight under the direction of Henry Fairfield Osborn, (1915). "Neanderthal man at the station of Le Moustier, overlooking the valley of the Vézère, Dordogne." Printed as front piece to *Men of the Old Stone Age: Their Environment, Life and Art*. Wellcome Images

in southern France. They described a fossil skeleton known as the Old Man: a skull, jaw, vertebrae, several ribs, most of the arms and legs, and smaller bones of the hands and feet. The print media sensationalized the Old Man and within a year he had appeared in the pages of *The Illustrated London News* and been painted by eminent paleo-artist Charles Knight. Fragments of additional Neanderthal skeletons were recovered in 1909 at the Dordogne sites of Le Moustier and La Ferrassie, effectively doubling the number of known Neanderthal specimens. Between 1848 and 1914, the field had identified more than fourteen sites across the globe that yielded Neanderthal fossils and the remains of other human ancestors—ancestors like Java Man from Trinil; *Homo heidelbergensis* from Germany; Cro-Magnon near Bonn; and even "ancestors" like Piltdown. By 1914, paleoanthropology recognized five species of human ancestors, two sub-species, and the tangible evidence of humanity's antiquity proved utterly captivating.

In addition to exciting anthropology and public imagination, these new Neanderthal finds provided fodder for science fiction—a young literary genre on the rise. The worlds of Jules Verne, H.G. Wells, and other early sci-fi authors teemed with unexplored geographies, Darwinism, mechanical inventions and the material cultures of science. The caves and archaeological sites of Europe provided a perfect backdrop for speculative fiction. The almost-human Neanderthals became the perfect alien character—so much like us, but also safely different. As more and more Neanderthal fossils entered the published record, questions about who they were, how they lived, and the implications of such a human-but-not-quite human species began to appear in a variety of media. French author J.H. Rosny captured the zeitgeist with his 1911 novella *Quest for Fire*. "At the very dawn of man's existence," Rosny wrote:

Rival tribes clash in a life-and-death struggle for the possession of fire. When their life-sustaining fire is lost during an attack by marauding Neanderthals, three

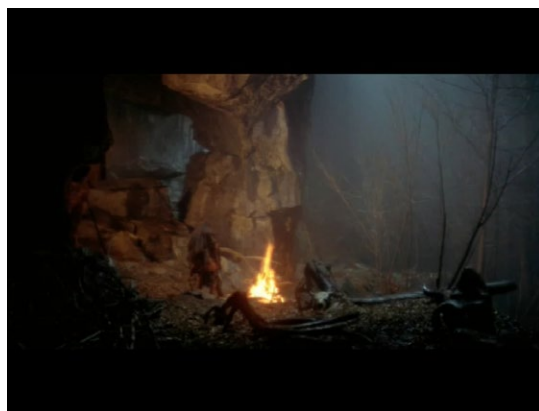
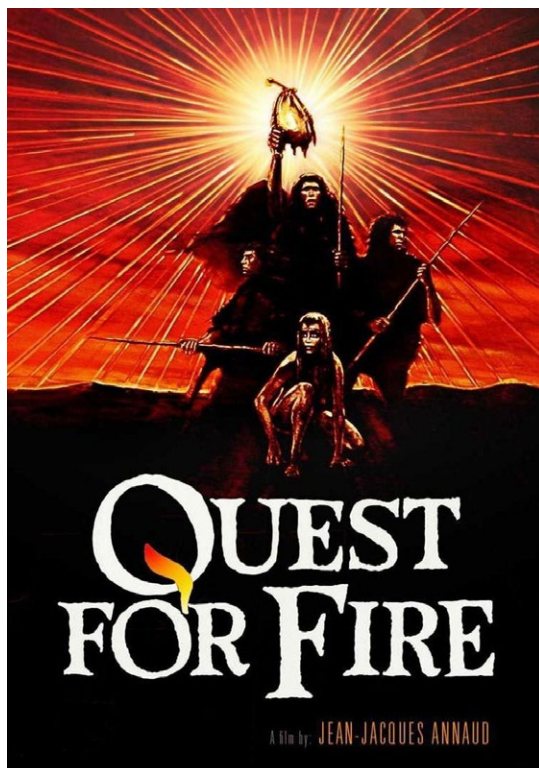


courageous warriors embark on a perilous journey into the vast uncharted world beyond their tribal land—a journey that takes man a giant step into the future.

The novella takes the state of anthropological knowledge post-La Chapelle and runs with the “what if” scenarios that such an evolutionary history suggested. Early twentieth-century scientists, particularly Marcellin Boule, described Neanderthals as brutish and inherently more primitive than the more “gracile” humans. Others were less overt in their Neanderthal prejudices—they saw Neanderthals as a sad and cautionary evolutionary story about a species unable to successfully evolve. Early dioramas and reconstructions in the 1910s-1930s displayed hunched individuals with exaggerated arms. Here, the dioramas seemed to say, was a clumsy species that couldn’t evolve to compete with the technological and cultural “superiority” of modern humans. The artist Charles Knight even wrote that he felt sorry for Neanderthals. *Quest for Fire* encapsulated this view of Neanderthals as pitiable primitives, soon to be easily out-competed by their more agile and intelligent human cousins. For all intents and purposes, Rosny’s descriptions of Neanderthals held just enough accepted details—just enough anthropological truth—about Neanderthals to make the story believable.

The key human attribute, for Rosny’s story, was the ability to create fire. Rosny’s sketch of *Homo neanderthalensis* showed a species capable of maintaining fire, but without mastery over it. Once the fire was lost, fire had to be discovered rather than created. Rosny describes humans as creating, caring, tending, and raising fire—and fire was a tool that Rosny’s audience would read as the success to humanity’s legacy. There was something metaphorical about human history that Rosny’s characters, and anthropomorphized fire, inspired.

Faouhm raised his arms to the sun with a long yell. “What will become of the Oulhamrs without Fire? How shall they live on the savanna and in the forest? Who will defend them against shadows and winter blasts? They will have to eat raw meat and bitter plants, never to warm their limbs, and their spearheads will remain soft. The lion, the saber-toothed tiger, the bear, the



The opening cave scene in *Quest for Fire*. The cave was modeled after Le Moustier, France.

tiger, the giant hyena will eat them alive during the night. Who will recapture Fire?”

When *Quest for Fire* was turned into a film in 1981, the appeal of the story remained because it asked audiences to puzzle out the metaphysics of evolution and origins. Where did we come from? Where are we going? What does our past make us? These themes drove *Quest for Fire* in 1981 just as much as it did in 1911.

While it is easy to retire Ron Perlman’s Oscar-win-



ning Pleistocene make-up (and that famous moth-eating scene) to Hollywood's archives, the characterization of the Neanderthal species provided in the film still provides a space to explore the questions of what makes us human—a phylogenetic foil in the literal and literary senses. One hundred years post-Rosny's *Quest*, the questions and the characters endure as the scientific community expands interpretations of material culture and archaeological remains but struggles with its own histories.

If you want to find the beginnings of a popular literary trope, starting with Shakespeare isn't a bad bet. Writer and biologist Vladimir Nabokov argued *The Tempest* was an early precursor to the science fiction genre: Caliban and Ariel—the savage and the ethereal spirit—backstop many traditional elements of imagined histories and futures. Drawing on the themes of Montaigne's essay "Of Cannibals," *The Tempest* uses elements like fantasy, magic, and especially irony to explore what makes humans "human."



## The Tempest and the Sentinel



Caliban and Ariel from "rough drawings (small) for scenes from Shakespeare" by John Massey Wright (1777-1866).

Folger Shakespeare Library

The tragicomedy was published in the First Folio three hundred years before paleoanthropologists excavated the fossilized bones of Neanderthals in southern France. As material objects, the Neanderthal fossils prompted challenges to scientific categories of species, but as the fossils passed into pop culture they slotted into these long-established Shakespearean archetypes. Caliban and Ariel challenge definitions of "human" and "civilized"—notions very much at the heart of speculative anthropology over the last century. Four hundred years post-*Tempest*, Caliban's caricature serves, for better or worse, as an archetype in re-imagining long-extinct fossil species.

While Neanderthals were the first fossil species explored in science fiction, they were by no means the only species. In the post-La Chapelle decades of paleoanthropology, more and more fossil species of human ancestors entered humanity's phylogenetic tree. By the 1930s, australopithecines like the Taung Child had joined Neanderthals and other species of *Homo*. These new species piqued popular interest, through print, art, and particularly through science fiction. Where early twentieth-century Neanderthals and *Quest for Fire* posed metaphysical questions about humanity, the mid-twentieth century saw fossil species get tangled up with questions of ethics. After two world wars, researchers pivoted toward trying to trace the history of human violence and morality. The evolutionary history of human morality—the hows and whys of human violence—percolated through both the science and the science fiction of the era.

By the late 1950s, the cast of human ancestors had expanded to include australopithecines—*Australopithecus africanus*—as well as Neanderthals. Australopithecines were accepted into the paleo community as human ancestors by the mid-twentieth century based on South African fossils like the Taung Child and Mrs. Ples. But even as questions of taxonomy were resolved, the question of how the species behaved—did it have a culture? what did that look like?—intrigued the scientific

There were many, many other species that were coming in and out of the scientific literature as questions of fossils' taxonomy were debated.



"Australopithecus at Home" by Giovanni Caselli.  
 Courtesy of Giovanni Caselli

community, particularly paleoanthropologist and anatomist Dr. Raymond Dart, discoverer of the Taung Child fossil. For several decades, Dart examined a series of artifacts sites in northern South Africa, like Sterkfontein and Makapansgat. Based on his initial studies, in the 1940s, Dart was quick to note the high presence of what looked like purposefully shaped bone in addition to shaped stone tools.

Dart concluded that the fossilized bones and stone tools from the sites were created by *Australopithecus africanus*, and that these australopithecines were "predatory ape-men," bludgeoning their way across the landscape. He called this complex of stone and bone technology the *Osteodontokeratic Culture* (Bone, Tooth, & Horn Culture or ODK) and argued that the artifacts were a collection of tools. In ODK culture, Taung and his ape-men were ruthless hunters—the dominators of the landscape and savages, really, with all of the charged connotations of the term.

Where Dart had imagined a blood-thirsty, bone-

club-wielding, violent set of human ancestors, others in the scientific community (such as Dr. Wilford Le Gros Clark), argued that Dart's ODK culture pushed the limits of scientific evidence and interpretation. Clark argued that Dart's ODK depended primarily on a lack of alternative hypotheses for the scientific community to evaluate. (In other words, what would account for the accumulation of bones if not human ancestors?) What Dart's hypothesis did, however, was usher in new fields of study within archaeology and paleoanthropology, like taphonomy, which looked at how soils and bones and rocks accumulated in caves like Makapansgat. New studies by researchers Dr. Sherwood Washburn and Dr. Charles Brain determined that natural causes accounted for the accumulation of bones in caves. Brain's studies took the budding field of taphonomy one step farther away from ODK-like interpretations by matching leopard teeth to puncture marks in a recovered australopithecine skull from Swatkrans. These findings—like the tooth punctures—revealed that hominins were vulnerable to predation: the hunter was now interpreted as the hunted. While Dart's theories never quite gained the heft or mo-

mentum he wanted in the field, the ODK culture convinced many to “prove it wrong.”

In public imaginations, however, the idea of a savage human ancestry caught fire, thanks in no small part to author, playwright, and trained anthropologist, Robert Ardey, and his popular *African Genesis: A Personal Investigation into the Animal Origins and Nature of Man*.

Reviews of *African Genesis* described the book as

Presenting a fascinating array of new scientific evidence, largely accumulated over the past thirty years of the origins of man. It is the author's unorthodox and intriguing theory that *Homo sapiens* developed from carnivorous, predatory killer apes and that man's age-old affinity for war and weapons is the natural result of this inherited animal instinct.

While not science fiction, per se, *African Genesis* was unquestioningly pivotal in disseminating the Killer Ape Hypothesis to those outside of conversations within academic anthropology. Ardey saw *African Genesis* filling a role that in contemporary literature might call narrative nonfiction.

Not in innocence, and not in Asia, was mankind

born ... In neither bankruptcy nor bastardy did we face our long beginnings. Man's line is legitimate. Our ancestry is firmly rooted in the animal world, and to its subtle, antique ways our hearts are yet pledged. Children of all animal kind, we inherited many a social nicety as well as the predator's way. But most significant of all our gifts, as things turned out, was the legacy bequeathed us by those killer apes, our immediate forebears. Even in the first long day of our beginnings we held in our hand the weapon, an instrument somewhat older than ourselves.

Elements of the ODK culture intrigued science fiction great Arthur C. Clarke, whose writing painted humanity's past as violent and destructive. His short story “The Sentinel” (written in 1948, a year after Dart's the discovery of ODK specimens) looked to deep time in order to explain humanity's present and “savage” condition. The story focuses on an usual artifact, found on Earth's moon, that seemed to be sending signals out into the universe. As the story unfolds, we learn that the transmitting artifact was encountered by humans and then left on the Moon as a mysterious material legacy, much like the way scientists uncovering tools from the archaeological record work to understand a material culture long past. “The Sentinel” emphasized the power and pervasiveness of tools and technology and the role that these play in shaping human history. Clarke's story gave his audiences the literary distance to read this transmitting artifact as a parallel to other technological innovations in human history—or not. “The Sentinel” would go on to inspire Stanley Kubrick's 2001: *A Space Odyssey*. Clarke's artifact became the monolith in 2001, surrounded by furry human ancestors wielding weapons much like the ODK culture. Like Rosny's details in *Quest for Fire*, the anthropology Clarke (and later Kubrick) included in their science fiction made their stories just believable enough to attract their audience's interest.

The interpretation of the australopithecines,



2001: *A Space Odyssey* monolith.



much like the Neanderthals decades earlier, became imbued with meaning and morality. These themes became deeply entrenched in the public's mind and long associated with fossils like Taung. However, much science points to a hominin that was very much at the mercy of its environment.

ODK culture was eventually shown to be fossilized horn cores from extinct antelope, the result of the natural, taphonomic processes of fossil formation. The presence of the cores at Makapansgat were not the result of hominin actions, a discovery that completely undercut Dart's hypotheses. Yet while Dart saw his Killer Ape and ODK culture fall out of favor, he never really lost his sense that humanity's history was long and dark.



## Hominins, Humans and Hybrids

Rosny's *Quest for Fire* looked to La Chapelle's Neanderthal bones and Clarke's speculative anthropology looked to material culture as inspiration for their science fiction worlds. Today, with the recent publication of the Neanderthal genome, it would appear that interest in mapping new anthropological discoveries onto the literary tropes of science fiction is just beginning.

By the end of the twentieth century, Neanderthals had come back in vogue for science fiction and speculative anthropology. Canadian sci-fi writer Robert Sawyer drew heavily on the then-most up to date paleoanthropology for the Neanderthal Parallax trilogy *Hominins, Humans, and Hybrids*, published in 2003-2004. Sawyer's details—like those of Rosny—were well-researched and rang just true enough to lend anthropological legitimacy to the stories.

In the trilogy, Sawyer lays out two different

Earths—an Earth, as we traditionally consider it, and an Earth where Neanderthals became the dominant hominin 250,000 year prior. In this parallel world humans (or *gliksin*) went extinct, not Neanderthals. (Sawyer's Neanderthals posit that the extinction of *gliksin* was due to technological superiority of Neanderthals, an inability to adapt to climate conditions, and a general inferiority of intelligence.) These two Earths cross when the Neanderthal physicist Ponter Boddit manages to travel between the Neanderthal world and our own Earth, through a portal that opens up at the Sudbury Neutrino Observatory's physical lab.

The Neanderthal Parallax trilogy asks: What if *Homo sapiens* came from a dark and violent evolutionary history? How would that shape and explain how we make sense of culture today? What if Neanderthals “won” the Pleistocene and out-competed modern humans? How would those hominins read human evolutionary history?

The winner of a Hugo Award, *Hominins* examines those what-if scenarios through Neanderthal and human interspecies relationships. Sawyer's attention to detail and his paleoanthropological research provide the same gestures toward scientific legitimacy as Rosny's survey of La Chapelle and the ODK literature. The paleoanthropological research Sawyer does—and the experts he interviews—is meticulous and thorough. The Neanderthal Parallax trilogy centers around the question of how to define humanity. By anatomy? By society? By history? Agency? By juxtaposing the Earth that's familiar to readers with an Earth where humans, rather than Neanderthals, become extinct during the Pleistocene, Sawyer generates a plot to explore these themes. In Sawyer's trilogy, Neanderthals live in a world where crime is unheard of and culture is completely cooperative. By “humanizing” Neanderthals in such a way, Sawyer's trilogy draws on more recent decades of Neanderthal research; research that demonstrates Neanderthal culture was complex and more nuanced than people like Henry Fairfield Osborn had originally argued.

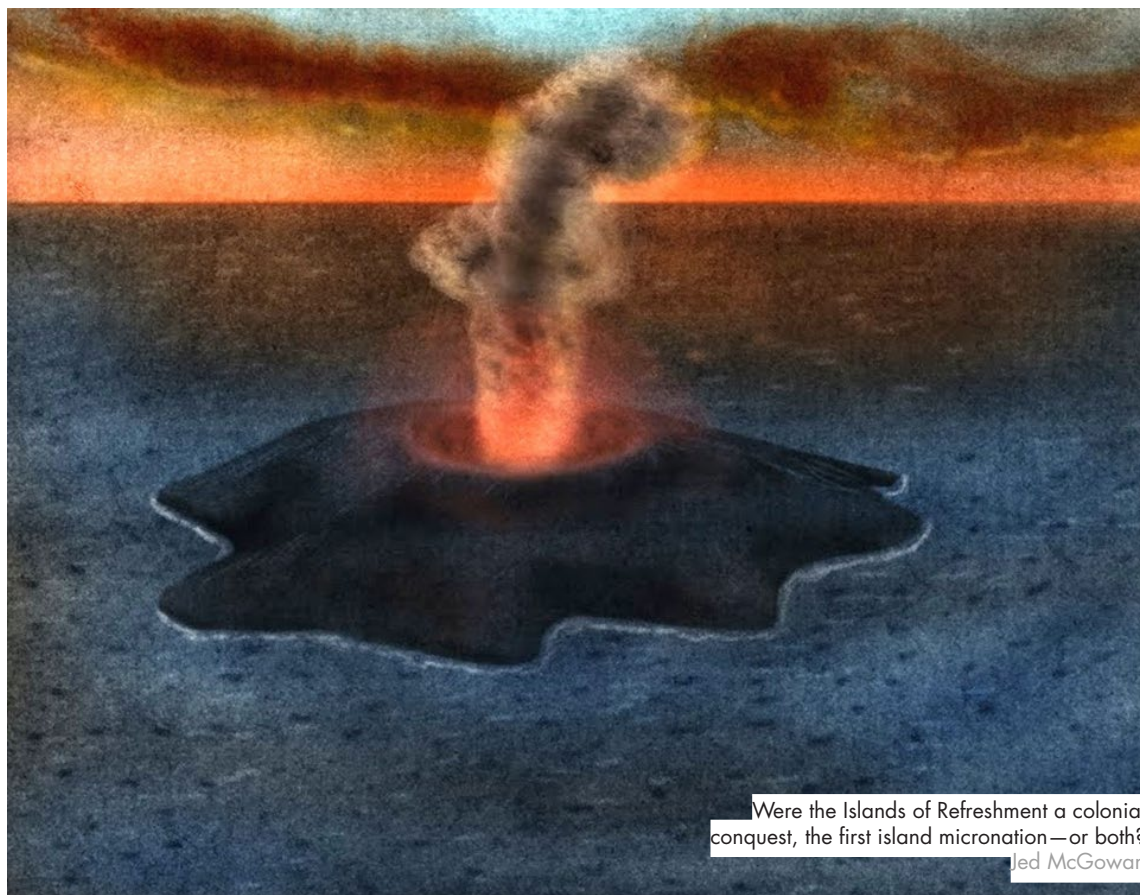
For anthropology, science fiction dramatizes an imagined past; it offers these “what ifs?” as explanations for why modern society is the way it is. The “what if” question takes the discovery of a fossil

In a fantastic literary twist, even the names of the human protagonists—Louise and Mary—are gestures toward paleoanthropology's history, thanks to Louise and Mary Leakey.

and introduces that discovery to audiences outside of a strictly scientific community. For Rosny, the invention of fire set humans on a path toward technological mastery. Science fiction inspired by Dart's ODK culture and the violence of 2001, by contrast, spoke to a dark and bloody evolutionary history. More recent sci-fi interpretations of the human past like the Neanderthal Parallax series interrogate the boundaries between human and not-quite-human.

These questions will remain salient in the twenty-first century and beyond. And though we usually associate science fiction with the future, it also explores imagined pasts—the trajectories that brought us here, and which will shape where we're going. Thinking about, researching, and dramatizing our long-extinct human ancestors provides intellectual space for a metaphysics of past and future humanities that extends beyond the material record.

The author would like to thank CJ Heim and Charles Heim for their questions and discussions about Neanderthals and science fiction—this prompted a much-needed rereading of *Quest for Fire*. The author would also like to thank the Institute for Historical Studies, University of Texas at Austin.



# The King of the Islands of Refreshment

by Benjamin Breen

An elderly sea elephant lies dozing on a beach. It is a spring morning, and the year is 1812. Unbeknownst to the sea elephant, the patch of sand on which it rests happens to be the most geographically isolated place on planet Earth.

An enormous glistening black shape—an orca whale on the hunt—emerges out of the surf. The orca races up the gentle incline of the beach and scissors the unfortunate pinniped between teeth the size of human hands. But the whale is also being hunted. Watching the scene is a sunburnt man with long scraggly hair, an overhanging brow, and inquisitive eyes. He braces himself, hefts an enormous handmade harpoon, and expertly skewers both orca and sea elephant.

Just another day as the king of the Islands of Refreshment.

The young man is a Yankee sailor from Salem named Jonathan Lambert, and he is the world's newest and most eccentric head of state. A year earlier, Lambert had formally declared his "absolute possession of the island of Tristan d'Acunha... and the other two, known by the names of Inaccessible and Nightingale Islands, solely for myself and for my heirs for ever." Lambert reasoned that "as no European, or other power" had ever publicly claimed the islands, they were free for the taking. And renaming: Lambert jettisoned the name Tristan da Cunha, a Portuguese toponym that the main island had borne since the sixteenth century. He rechristened them as the Islands of Re-



freshment. “Refreshments,” Lambert proclaimed, “may be obtained at my residence,” and he hoped that “all vessels, of whatever description, and belonging to whatever nation, will visit me for that purpose.” The new nation’s naval emblem was a white flag.

Lambert’s statement of possession was self-confident, even lawyerly, grounded on “rational and sure principles”—despite an eccentric mention of “the laws of nations (if any there are)” towards the end. Of course, the truly strange feature of this document was only apparent to those present on the day it was written. Lambert literally represented one quarter of the new nation. The Islands of Refreshment consisted of four people.



The Pacific Ocean is our planet’s largest body of water, but the South Atlantic is perhaps Earth’s most desolate expanse of open space. Viewed from satellite orbit, South Atlantic islands like Saint Helena, Ascension, and Tristan da Cunha flicker like miniscule green gems set against a blue void. But they began as flames—jets of molten lava escaping from volcanoes on the sea floor, cooling, then forming outposts of dry land. No humans are indigenous to these islands—indeed, no land mammals of any kind. For millions of years they were the sole domain of birds, of marine mammals, of simple shrubs and grasses. As *Homo sapiens* made its hungry way out from Africa, moving into Australia, Siberia, Patagonia, Ha-

waii, these most remote of all islands remained unknown and untouched.

They stayed that way until at least the seventeenth century. Tristan da Cunha, the Portuguese navigator who gave the place its (first) name in 1510, merely spotted it from his ship’s deck, labeled it on a map, and moved on.

Lambert believed himself to be the first human to set foot on the island, but this claim is thrown into doubt by his off-handed mention of the presence of wild boars. Portuguese and Spanish sailors were famous for “seeding” desert islands with goats and pigs stored in ship holds. Later expeditions would then return to these islands years or decades later to find thriving colonies of feral (and tasty) herds.

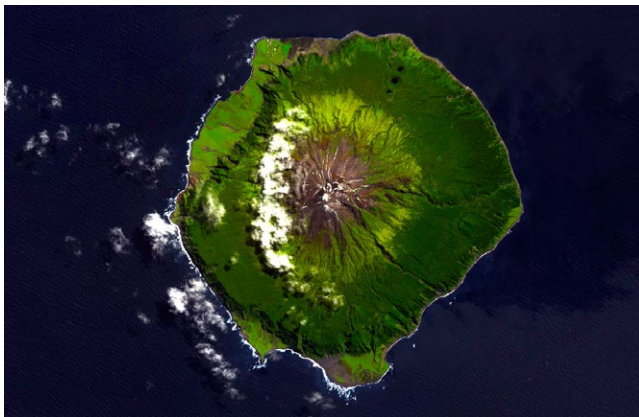
In other words, if wild boars or goats happen to be nosing around on your desert island, you can bet that an early modern Iberian sailor got there first. Indeed, one such island, Exuma in the Bahamas, is still home to a large colony of feral-but-friendly swimming porcines who inhabit a place called “Pig Beach.”

But even if Lambert and his three companions weren’t the definitive discoverers of the island, they were almost certainly the first humans to permanently settle on it. Or at least to make the attempt.

Life on the Islands of Refreshment, it turned out, was almost impossibly miserable.

For a year after his crowning as king, Lambert threw all of his energies into developing the island’s fledgling economy. He and his three subjects (a friend named Andrew Millett, a man

Jonathan Lambert to Captain John Briggs, 21st December, 1811. “I should have written by Captain Lovel, on his return from this place,” Lambert confided, “but as I had nothing worth communicating, I reserved myself until I could, by a year’s residence, give you some account of my situation.” Briggs, at the time of Lambert’s letter a young man of twenty-six and evidently one hungry for thrilling tales of island colonization, would go on to a successful career in the British Army in India. See Arvind M. Deshpande, *John Briggs in Maharashtra* (Mittal Publications, New Delhi, India, 1987).



Tristan da Cunha, the sole inhabitable island of the erstwhile Islands of Refreshment, as seen from space.

NASA

known as Thomas Currie or Tomasso Curri, and an unnamed “apprentice boy”) tended to a small flock of geese, ten breeding pairs of chickens, a few dozen cattle and a herd of wild boars. They went scouting with the island’s unofficial fifth subject, Lambert’s dog, and nurtured a garden of cabbage, beets, carrots, parsnips, and lettuce. But as Lambert admitted in his final letter from the island (which was sent to his friend, the Indian-born army officer John Briggs, and later republished in the *Edinburgh Magazine*), “our situation, like all new settlers, has not been very comfortable.”

That was a massive understatement. Several pages into his letter, which dwells on the fresh air and natural abundance of the region, Lambert let slip a revealing fact: the residents of the Islands of Refreshment, man and beast, actually subsisted almost entirely on elephant seals. “We have killed about 60 since we landed,” he reported, “and I suppose we shall kill about two a-week through the year.” Stop and consider this for a moment: southern elephant seals max out at approximately 6,600 pounds. In other words, the four humans and several dozen animals of the Islands of Refreshment went through around 8,000 to 10,000 pounds of oil-laden elephant seal meat and blubber *per week*. Which, though presumably sustaining, doesn’t sound particularly refreshing.

Lambert consoled himself with the (never realized) prospect of making a healthy living by selling the elephant seal’s oil to traveling mariners. But until then, the king’s life seems mainly to have consisted of elephant seal hunting interspersed with the tedium of growing, cooking, and eating bland root vegetables. “Turnips have been bread to us,” is another buried lede in Lambert’s final letter. Lambert even apparently tried to domesticate his local sea elephant herd, describing his “two ponds, where the sea elephants abound; here I have 8 sows, and 4 boars quite tame; all of which, save 5, we have caught on the island.”

King Lambert never had a chance to see his plans reach fruition: his reign ended after a year. Lambert and two of his subjects, fully three quarters of the island’s population, drowned in a fishing expedition in May of 1812.



Portuguese animal traders as depicted by an anonymous Japanese painter circa 1600.  
Wikimedia Commons



Pig Beach as photographed today.  
Wikimedia Commons

To watch a video about Tristan da Cunha, visit:  
<http://appendic.es/m/1j>

Granted, they weren’t eating the entire animals. Likely almost all of the slaughtered sea elephants was processed for oil, with choice cuts of meat set aside. After describing his herd animals, Lambert admitted, “all this stock, together with ourselves, live at present on the flesh of the elephant.” He makes an exception for the pigs, who root around, “but I give them an elephant once in ten or fifteen days to keep them in heart.”





Dinuzulu kaCetshwayo in 1883.  
Wikimedia Commons



Francois-Joseph Sandmann, *Napoleon at Saint-Helene*, 1828.  
Wikimedia Commons

But Thomas Currie survived, and he lived to see the modern history of the islands take shape.



Even today, the Tristaners (as they're called) carry on a hardscrabble existence, eking out a living in the volcanic soil by growing potatoes and harvesting lobster for sale to Japan.

"The Tristan islander lives with his back to the mountain and his face to the sea," was the Royal Navy officer Derick Booy's impression in 1942. Booy had been sent to the islands at the height of World War Two in order to set up a secret U-boat monitoring station. But he became preoccupied by the strange and tight-knit society he found there. By the 1940s, the island was home to 200 people who shared only seven family names in total: Glass, Swain, Green, Rogers, Hagan, Repetto, and Lavarello. Today, these seven families are still the sole residents of the islands, and the population is only slightly larger, hovering at around 270.

But when Lambert died, this relatively populous future was still a century from fruition. From being islands of refreshment and hospitality, Tristan da Cunha and the other South Atlantic islands would become places of solitude in the decades following Lambert's one-year reign as king.

The island's closest neighbor, St. Helena, emerged as a kind of exotic imperial prison: it was there that the British confined Napoleon following his defeat at Waterloo. Seventy years later, a second defeated military leader would be exiled at St. Helena: Dinuzulu kaCetshwayo, the King of the Zulu. Islands like St. Helena and Tristan da Cunha ceased to tantalize adventurers and sailors

Booy was also an acute observer of local life, making a close study of the island's distinctive courtship rituals:

"When a girl allowed a lover to make a pair of moccasins for her, she was favoring him. When she knitted him, in return, a pair of socks he could estimate his chances by the number of rings of 'marking' wool around the tops: if there were four such 'marks' of affection, he knew he was the favorite. Acceptance was signified when she invited him to bring her his clothes to wash. After that they would appear openly as an engaged couple."



with the promise of a life of Robinson Crusoe-like self-reliance. They became way stations in a vast system of global empire, staffed and maintained like fortresses, and administered by bureaucrats thousands of miles away.

In the great games of nineteenth-century imperial rivalry, it seemed impossible that such tiny outposts could ever be more than places to restock supplies or deposit the occasional prisoner. But in the twenty-first century, such tiny, remote islands have taken on an entirely different function.



Starting in 1967, when a group of British oddballs founded Sealand on an abandoned World War Two platform off the coast of England, micronations have been enjoying a renaissance. One of the pioneers of the movement was none other than Ernest Hemingway's brother Leicester, who constructed a small platform off the coast of Jamaica, dubbed it New Atlantis, and declared himself its ruler. The island's constitution was simply the U.S. Constitution with the words "United States" replaced by "New Atlantis."

These early micronations attempted to make a living by selling collectible coins and stamps—a tactic employed by the current residents of Tristan da Cunha as well. One resident wrote in 2009 that:

We do get visitors here on Tristan—up to 130 a year on "regular" passenger vessels plus several hundred more via the handful of cruise ships which call. Our main income is derived from lobster fishing, although we also earn revenue from the sale of commemorative stamps and coins.

The histories of micronations are often histories of personal eccentricity. Michael Oliver, a Lithuanian immigrant turned Las Vegas millionaire, devoted a fortune to sustaining the short-lived Republic of Minerva (1971-1972) in the South Pacific, only to see it collapse following an invasion by the Republic of Togo. Yet Oliver persisted, founding a libertarian group called the New Hebrides Autonomy Movement in Vanuata (which has since slapped him with a lifelong ban). Purely whimsical micronations abound, from the Belgian Niels



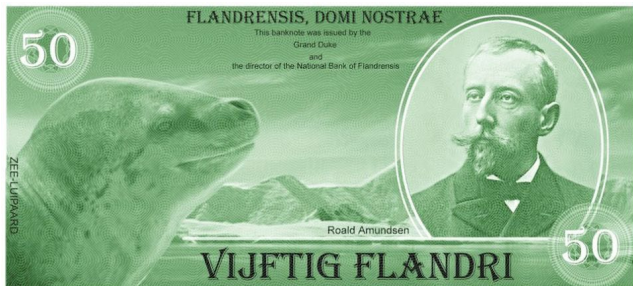
A thirty-five dollar coin from the short-lived Republic of Minerva, created on a coral reef in the South Pacific by a Los Vegas real estate millionaire in January of 1972 and invaded by the Tongan navy in September 1972.

[Wikimedia Commons](#)

Vermeersch's Grand Duchy of Flandrensis, which has claimed five islands off the coast of Antarctica, to the Republic of Kugelmugel, which occupied an orb-shaped house in 1980s Vienna.

Other plans have been more serious, for better but usually for worse. The Dominion of Melchizedek is perhaps the shadiest micronation of all, created almost entirely to facilitate international crime. It lays claim to a handful of uninhabited islands and lands in Antarctica, and can be traced back to a father and son duo, the Pedleys, who began operating it in the mid-1980s. The Dominion has been accused of selling fraudulent travel documents to hundreds of Chinese, Filipino, and Bangladeshi immigrants. It is recognized by only one country, the Central African Republic, and its current president is a mysterious Filipino-American businesswoman named Pearlasia Gamboa. Things get even weirder from there: the *Washington Post* described the micronation's history as a "walk down a bizarre labyrinth that includes a home-brew religion."

Micronations also loom large in the writings of near future sci-fi novelists like Neil Stephenson and William Gibson. In his cyberpunk classic *Neuromancer*, Gibson described independent orbital platforms used as tax havens, casinos, and even Rastafari outposts, while Stephenson envisioned the rise of independent nations functioning as



A fifty Flandri bill issued by the Grand Duchy of Flandrensis in 2011.  
Wikimedia Commons



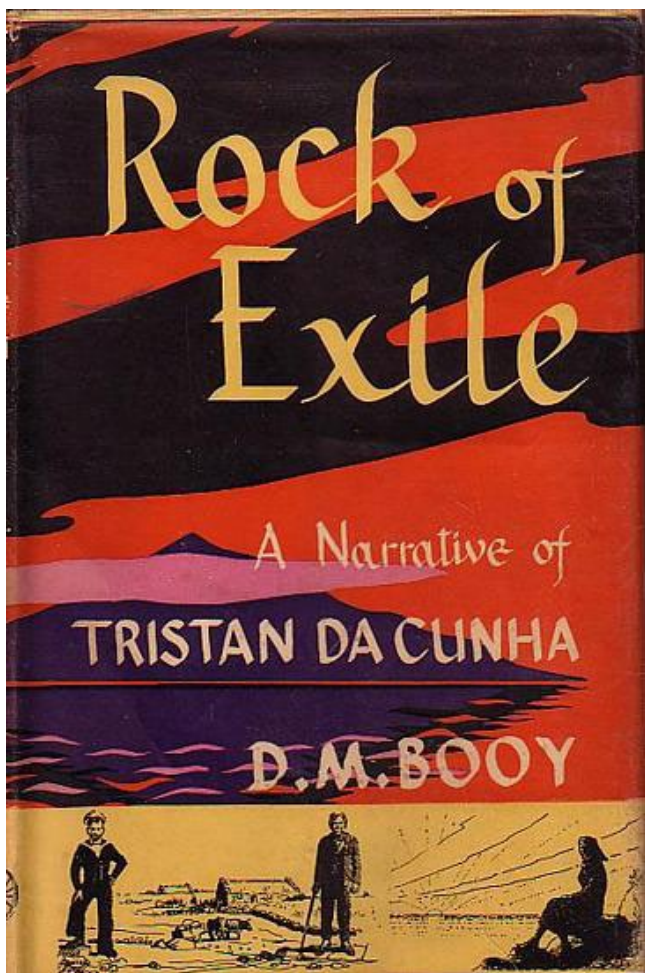
“data havens” for encrypted web traffic. Recent investments by tech billionaires like Peter Thiel in an organization known as the Seasteading Institute hint that this latter prediction, at least, is on its way to becoming a reality.

Yet while they might look forward to these twenty-first century futures, the present-day inheritors of the Islands of Refreshment also face the past. Simon Winchester, who wrote about the island for his book *Outposts*, observed that “the older islanders incorporate nineteenth-century ‘thees’ and ‘thous’ into their speech.” History is still ever-present in the islands, for the simple reason that there isn’t much to go around. The documented human history of the place begins with Lambert and ends only two hundred years later in the present day.

The events that took place in between have taken on a towering importance in local lore.

Winchester became especially interested in the Royal Navy officer Booy’s 1942 visit and the book he wrote about it, *Rock of Exile*. Booy fell in love with a local girl named Emily who he remembered even decades later with an almost suffocating vividness:

The night air was an enveloping golden presence as we stood at the break in the wall. I was conscious of bare, rounded arms and the fragrance of thickly clustered hair. The lingering day was full of noises. As the sky darkened to a deep, umbrageous blue, speckled with starlight, and the village was swallowed by darkness at the foot of the mountain, from somewhere in that blackness came the throaty plaint of an old sheep, like a voice from the mountain... the girl waited only a few minutes before her full lips breathed “Goodnight,” and she slipped toward the house.



The first edition cover of Derrick Booy’s *Rock of Exile: A Narrative of Tristan da Cunha* (London, 1957).



Winchester performed a bit of sleuthing during his visit, tracing the aftermath of the officer Booy's love affair. He eventually found the house where Emily lived some forty years later, now married to a local Tristaner who Winchester asked about his past. But on an island like this, even a broken-off love affair with a military man—surely one of the most common personal tales of the World War Two era—took on a powerful local significance. It became part of the island's scanty past, and with it, part of its future. It's a lesson about history and its futures that nation-builders from Lambert to the contemporary vanguard of Libertarian micro-nations would do well to keep in mind.

"Remember," the man told Winchester. "Whatever you write will last for years; we back on the island will pore over it and analyze it a thousand times. Be careful what you write—for our own sakes."



Jed McGowan



# NOT-SO-FUNNY PAGES

## Divining the Future in Babylonia

by Jed McGowan

.....

We featured Jed McGowan's "Hawaii" in a previous issue of *The Appendix*, and were so taken by his lovely, largely wordless comics that we invited him to contribute an original work to "Futures of the Past."

The thematic guideline was simple: make it about the future. McGowan came through with the panels below. Whereas McGowan's "Hawaii" and "Voyager" dramatized inanimate forces operating across vast distances and chronologies, "this comic is much more human," McGowan writes. "One thing that interested me about ancient liver divination is that the diviners were using a small, specific object (a liver) to understand a much larger world. I tried to communicate that in my comic by using many close-ups throughout and ending with a wide shot when the omens are revealed."

For readers wishing to learn more about divination by liver—the formal name is haruspicy—McGowan recommends the wonderfully-titled *Babylonian Liver Omens* by Ulla Susanne Koch. "The omens that come at the end of my comic were taken from it," he told us.



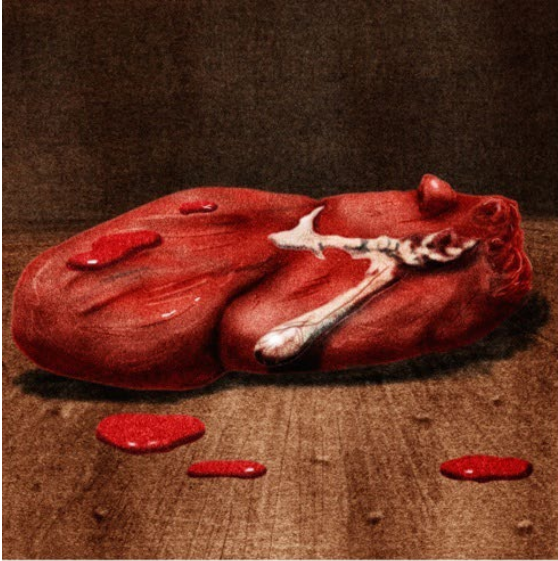
# DIVINING THE FUTURE

## IN BABYLONIA C. 1600 BC



**IMPORTANT  
QUESTIONS  
WERE ASKED  
OF A PRIEST**



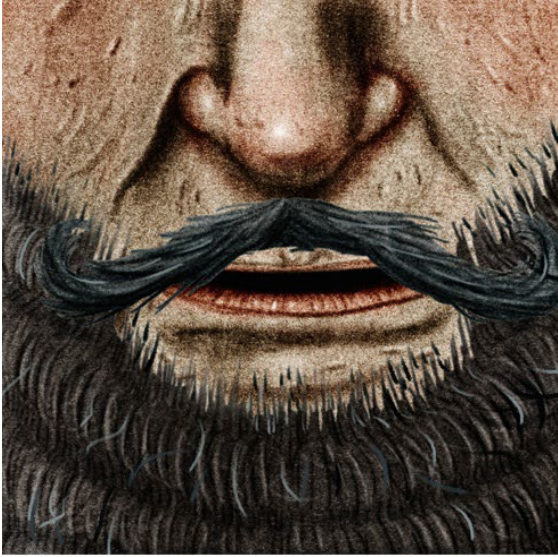


**HE EXAMINED  
A SHEEP'S LIVER**

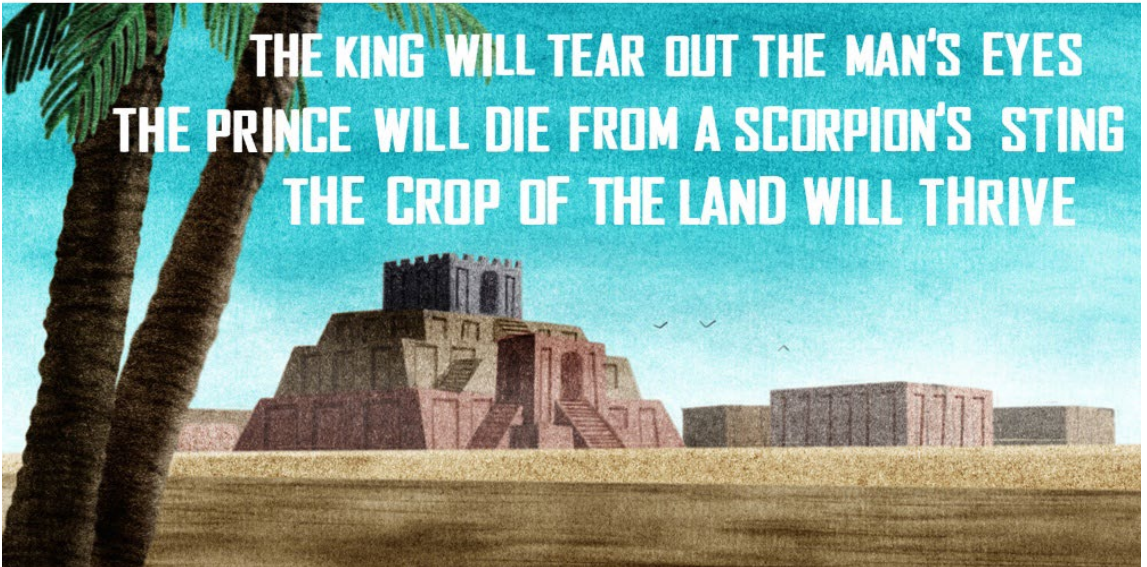
**MARKED  
ABNORMALITIES  
ON A CLAY MODEL  
INSCRIBED WITH  
PREDICTIONS**







**AND SPOKE  
THE OMENS**



**THE KING WILL TEAR OUT THE MAN'S EYES  
THE PRINCE WILL DIE FROM A SCORPION'S STING  
THE CROP OF THE LAND WILL THRIVE**



A detail of Quaker nudity from *The Quakers Dream: or, the Devil's Pilgrimage in England (1655)*.  
Wikimedia Commons

## The Wild, The Innocent, and The Quaker's Struggles

by Brooke Palmieri

Although they were notorious for appearing naked in marketplaces, interrupting sermons, and calling for the overthrow of the church, the Quakers were extraordinarily disciplined about running riot.

It made sense for the Quakers to cultivate an exaggerated presence in order to make their voices heard among the clamor of other religious sects formed after English Civil War. But what set them apart was the volume of their printed works. During the early years of their establishment in the 1650s, Quakers published about a pamphlet a week, paid for through a collectively managed fund, and distributed by a network of itinerant preachers known as the "Valiant Sixty." The Sixty,

which were in fact more than sixty people, included George Fox, Margaret Fell Fox, Mary Fisher, and sixteen-year-old George Whitehead. Because they commanded others to tremble before the Lord, they were called Quakers, a title they re-appropriated from their critics. Among themselves, they were the Society of Friends. Unlike nearly every other group to arise out of the traumatic events of 1640s England, the Friends have survived as a religious group to this day.<sup>1</sup>

Early Quaker pamphlets were as in-your-face as early Quakers. Founder George Fox's tracts overflowed with visions of Final Judgement, titles like *The Vials of the Wrath of God Poured Fourth* (1654) and *The Great Mistry of the Great Whore Unfolded* (1659).

George Whitehead spent his teenage years in and out of jail for preaching unorthodox views with the kind of boldness that would have fit in with the Sex Pistols at the Silver Jubilee. From prison he wrote works such as *Cain's generation discover'd* (1665), and *The path of the just cleared: and cruelty and tyranny laid open* (1655). The overarching style was passionate and apocalyptic.

But is it possible to imagine a future when you believe the world is going to end? Even though the tone of early Quaker pamphlets was mostly apocalyptic, the system of pamphlet production and distribution the Valiant Sixty built was ultimately stronger than some of the beliefs it spread. Consumers of these publications included converts across England who had been visited at one time or another by members of the Valiant Sixty. In the absence of stable leaders and places of worship, converts were taught to form weekly Meetings to keep up the faith. The pamphlets were issued at regular intervals to encourage Meetings, and to update them about experiences of the traveling Sixty. By imagining its future in print, Quakerism took on a social life of its own and became more than just a fad.



Not every reader of Quaker pamphlets was sympathetic. Ephraim Pagit added Quakers to the ranks of his catalogue of heretics, the *Heresiography* he had begun in 1645. Pagit saw the Quakers as the latest in a long line of upstarts.

Other citizens and divines whose worldviews the Valiant Sixty actively undermined produced pamphlets of their own in response to the Quakers. One critic, Thomas Underhill, described their effect on English society in a 1660 pamphlet, *Hell Broke Loose*:

[Quakers] are the most immodest, obscene, people in the world, next to the late Ranters. If all the Stories of their womens tripping themselves to the very skin, in the presence of men, and of mens



The Quakers were just one among a host of new sects vying for members in seventeenth-century London. Image from *A Catalogue of the Severall Sects and Opinions in England and other Nations*, 1647.

Wikimedia Commons

*The Names of the Sects, viz.*

A	Nabaptists	pag. 1	Expecters or Seekers.	ibid.
	The sum of a Treatise		Divorcers	129
	of Mr. J. J. against		Of the Papists	131
	Anabaptists	p. 28	Of the Shaker or Quakers	135
	A pious letter of Mr. Phil-			
	potes to a friend of his,		Of the Ranter	145
	prisoner in Newgate;		The Papists compared	
	wherein is debated and		with other hereticks, &c.	148
	discuss'd the matter or		Muncerians	29
	question of Infants bap-		Apolloticks. Separatists.	
	tisme.	p. 41	Catharists. Enthusiasts.	
	Brownists	p. 51	Libertines	28
	Semi-separatists	p. 72	Adamites	30
	Independents	p. 112	Hutites. Augustinians	
	An Extract of the Acts of		Bewkeldians Melchior-	
	the Nationall Synod of		rites. Georgians. Meno-	
	the reformed Churches		nists. Puertis Similis	29
	of France	79	Servetians. 30. Libertines.	
	Familists	80	Denkians. Semper orantes.	
	Adamites	89	Deo-reliet. Monasterien-	
	Antinomians	91	ica. Plunged Anabap.	31
	Arminians	113	Brownists. Barronists.	66
	Socinians	114	Wilkinsonians	67
	Antitrinitarians	116	Johnfonians. Ainsworth-	
	Millenarians	117	ian. Robinfonians.	ibid.
	Hetheringtonians	118	Lemarists	
	Antifabbatarians	119	Castalian familists	87
	Traskites	120	Grindletonians	ibid.
	Jesuites	121	Familists of the Moun-	
	Of the Pelagians	126	tains.	88
	Soul-sleepers	127	Of the valleyes. Scattered	
	Of Anti-scripturians	128	Block. Caps Order. &c. ibid.	



Quakers were added to the fifth Edition of Pagit's Who's Who of rebels, the *Heresiography*.

Early English Books Online



so doing in the presence of women of late years, should be here set down, they would be enough to make a large Volume.

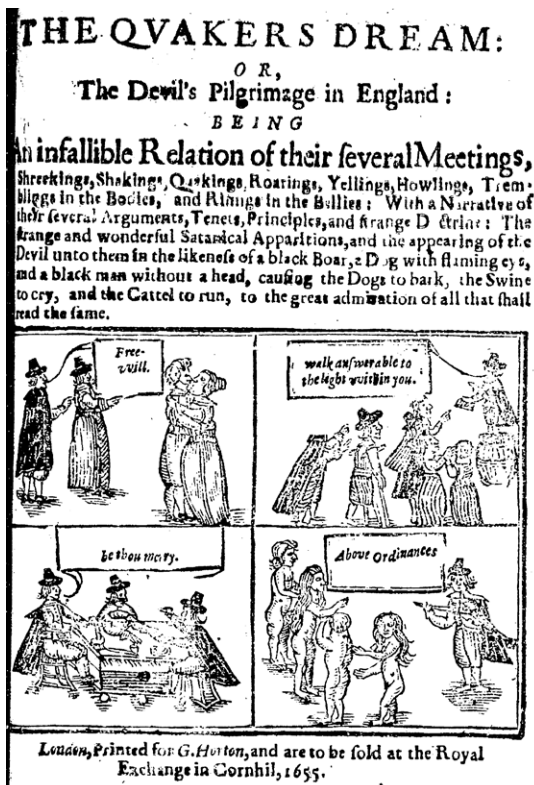
Underhill even provides a list of seven such streakings. Underhill's idea of Quakers as "poisonous Weeds ... with which the Garden of the Church of England is overrun," comes largely from his perception of the "multitude of motions, in Counsels, Books, Papers, Letters, which they have sent or delivered unto every pretending Authority for these many years." The majority of the book is comprised of quotes lifted verbatim from Quaker tracts, so widely available were they to Friends and their enemies. An earlier anti-Quaker writer, Francis Higginson, did not limit his disgust to printed matter when he complained about Quakers' "printed Libels, and...Manuscripts that flye as thick as Moths up and down the Country." The Quakers got as good as they gave, with detractors issuing violent outpourings of their own against them, among others Ralph Farmer's *Sathan Inthrone'd in his Chair of Pestilence, or Quakerisim in its Exaltation* (1657), Thomas Smith's *A Gagg for the*

*Quakers* (1659), Lodowick Muggleton's *The neck of the QUAKERS Broken* (1663), Francis Bugg's *Painted Harlot both Stript and whipt* (1683).<sup>2</sup>

The title-page to the *Quakers Dream* illustrates the major aspect of Quakerism that angered so many contemporaries: in the upper right panel the preacher preaches to "walk answerable to the light within you." The Quaker belief in the "Inner Light" lead to a rejection of written doctrine and hierarchy, replaced with belief in equality. George Fox even wrote about the equality of men and women. Confidence in their "Inner Light" gave Quakers a certain brazen edge to their beliefs, but the "Inner Light" was also what linked Quakers to earlier religious outliers and mystics like Jakob Böhme. To the eyes of their enemies, belief in the Inner Light and rejection of the authority of Scripture (which Quakers called "letters") posed the greatest danger of all.<sup>3</sup>

The violent titles of pamphlets against Quakers were not just rhetorical. Quakers were gagged, hung, stripped, and whipped, and more than any other religious group at the time, imprisoned in horrifically overcrowded conditions. There were times when the number of Friends in prison was so high that local meetings were kept up by children.<sup>4</sup>

By 1673, around two decades after the foundation of the Society of Friends, Quakers had suffered almost constantly, especially in the aftermath of the Fifth Monarchy Uprising in 1661, despite their innocence. They had officially declared themselves pacifists in an attempt to distance themselves from the violent architects of the uprising, but were faced nevertheless with legislation targeted directly at ending the movement: the Quaker Act of 1661. But they were able to print more pamphlets than ever despite persecution and the oppressive Licensing Act of 1662. Through pamphlets and traveling preachers they had gained more followers and built new communities as far away as Barbados. All of this, right under the nose of Sir Roger L'Estrange, "Surveyor" of the Press (known to contemporaries the "Bloodhound of the Press"), who particularly hated Quakers and tried constantly to shut down their printing operations.<sup>5</sup>



Trolling, 1655 style.  
Early English Books Online

By 1673, the structure of Meetings had expanded into something like a bureaucracy. The main event was the Yearly London Meeting. There was also the “Six Weeks Meeting,” which met to “weigh & consider of such affaires relating to Truth ... as might not be judg’d fitt to be publickly discoursed.” Quaker historians such as William Braithwaite describe this as a time of settling (despite constant upheaval). Conversely, Christopher Hill regarded it as selling out the revolution, which began during the period when Quakers proclaimed themselves pacifists back in 1661.



Over the years, the Quaker publication process grew both more refined and more practical, helping to translate the mystical core of Quakerism into a set of tools for effective collective action. On 15 September 1673, the Quakers founded the Second Morning Meeting to undertake the task of reviewing manuscript submissions for publication, but also to maintain a library, agreeing

That 2 of a sort of all bookes written by frends be procured & kept together & for the time to come that the bookseller bring in 2 of a sort likewise of all bookes that are printed, that if any book be perverted by our Adversaries we may know where to find it. And that there be gotten one of a sort of every book that has been written against the Truth from the beginning.

If the sheer numbers of printed pamphlets alone had first given a future to Quaker beliefs, collecting these printed pamphlets in an official library was a crucial second step, in addition to streamlining the process of submission and publication. A team of eight Friends set out to collect the books and solicit manuscripts: George Roberts, William Welch, Ellis Hookes, James Claypoole, George Whitehead, William Penn, and Ellis Hookes, who was also in charge of keeping the meeting minutes. Nicholas Jorden of Bristol, and Nicholas Cole of Plymouth, were also sent to scare up printed Quaker and Anti-Quaker tracts from their parts of the country. The Second Morning Meeting, with its origins in collective trembling, quaking, and sometimes streaking, became a unit for archiving, printing, and circulating ideas that would not be unfamiliar to activists today.



A Clothed, but loud, Quaker, from the *Cries of London*, a visual guide to the soundscape of London - also including fishmongers, balladeers, and flower girls and the cries by which they hawked their wares (1688).

The British Museum

The Second Morning Meeting minutes give insight into the many different fates that could befall a book under collective decision-making. Outright acceptance and rejection of manuscripts was rarely the case. Even the most prominent Quakers submitted to the authority of the Second Morning Meeting: George Fox himself had a “paper ... read and ordered to be laid by till G.F. be spoken with about it,” and a work by another Quaker leader, Isaac Pennington, had his book *The soul’s food* “not Judged meet to be printed.” A book written by John Bezers, read by Bezers himself aloud to the meeting, was “concluded not convenient nor safe to be printed or published.” Moreover, Bezer’s depiction of Jesus in the work caused the Meeting to persuade Bezer to “submitt & give [the book] up to the Meeting” for safekeeping—a process involving some negotiation but with which “he ex-

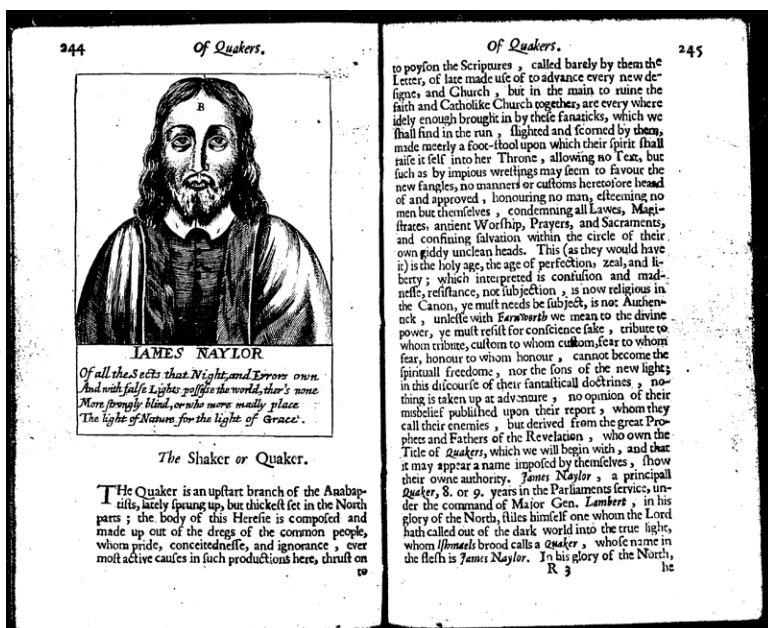
pressed his satisfaction therein." Since James Naylor had been arrested and mutilated in retribution for entering the town of Bristol upon a donkey in the manner of Jesus's entrance into Jerusalem in 1656, the Meeting upheld a ban of his writings to distance themselves from his bad reputation. They ordered "the printing of J: Naylor's Bookes be suspended till it be taken into further & more generall Consideration by the 2d dayes meeting & some Antient friends of the Citty," and did not lift the ban for nearly two decades.

This element of rejection hints at a shorthand definition suggested by some historians for the Second Morning Meeting: a censoring body. It's also seen to be at odds with the original spirit of the Quaker movement: one of mystical visions and involuntary proclamations, or as the Quakers Dream described it, "Shreeking, Shaking, Quakings, Roaring, Yellings, Howlings." Shaping the Quaker "message" did take up a lot of the Meeting's agenda, but seen within the totality of the tedious corpus of meeting minutes, censorship was just one of its functions.

For instance on 30th November 1673 an "Epistle entituled a loveing seasonable advice to the Children of light" written by Thomas Taylor was deemed unfit for print, but the Meeting decided that it might be "spread & read amongst freinds in

Manuscript where it may be serviceable." Sometimes works were not printed because they were old news, for instance in John Gratton's "answer to John Cheney ... it's so long since the Preists sheet came forth." And since it was rumored that Cheney intended to write more (and he did, called *The Shibboleth of Quakerism*), they decided "the rest may be answered in one book" to conserve time and money. Aside from practical reasons, works were most often rejected to prevent "reviving troubles to friends," either with other religious groups such as Baptists, or with authorities with the power to fine or imprison the author. In other cases, Friends writing works from prison were encouraged to withhold publication out of concern that it would "frustrate & strengthen their bonds."

The decisions made by the Meeting were made collectively. The majority of works published underwent a process of communal review, and edits were negotiated with each author, and even rejection letters were written and signed collectively. Minutes record that final decisions as to the publication of manuscripts could be made by no less than three or four Friends. In reality more were usually present—sometimes including the author of a work, his or her family, or neighbors or friends which delivered manuscripts on their behalf. For more prominent publications, such as the collected works of a deceased Quaker, there



James Naylor, *The Quaker Jesus*.  
Early English Books Online



were more readers: often manuscript collections were available on loan to interested readers. Equally, for more controversial books, there were more readers: for instance when a schism broke out in the Quaker colony of Pennsylvania, former Quaker George Keith's books were reviewed by no less than 8 friends, "and any other that are Free." The short form Quaker writings took, pamphlets, were key to this communal process of editing, because works were read aloud to all present, and edited orally as well. Over time, publishing longer works meant more frequent meetings, and more breakaway editorial committees. Only after edits were collectively agreed upon with the authors were manuscripts taken away by the printers, who were often present at the readings.

The Meeting format, which had its origins in collective, mystical experiences of trembling and Quaking in fear of the Lord, and which had formed part of the basis for Quaker survival through terrible persecution, also became a forum for collective skills-sharing in reading, writing, and publication. And in turn, a sense of collective education and advocacy. After all, the subject matter taken up by the Quaker press in the late seventeenth and eighteenth centuries included a number of incredibly progressive issues: pacifism, gender equality, racial equality, and prison reform.<sup>6</sup>

The potential futures imagined by a few seventeenth-century hellraisers have underpinned issues of social justice that still matter today, and may have even helped give rise to them. In other words, when Hell Broke Loose, the outcome wasn't entirely pandemonium.



## Notes

1. In the first three decades of Quakerism, Quaker pamphlets took up between 8.8 and 10 percent of all known titles published in England—no small feat for a group that was about 0.73% of the population. O'Malley, Thomas. "Defying the Powers and Temper-

The Morning Meeting sought to collect the works of Friends who had died, as with William Dewsbury. They sent their enquiries to Warwick, York, and Bristol to collect his "books and epistles", and during the autumn of 1688 they were reviewed by two teams of 3-5 readers, and by January agreed with Andrew Sowle as to the printing of Dewsbury's works. Further evidence that the Meeting ran something like an archival deposit for deceased Friends, which could be loaned to new readers, comes from a 1681 minute:

*Thomas Salthouse representing to this Meeting the Mind of the Quarterly Meeting in Cornwall, as desiring the perusal of the Papers, Testimonies & Epistles of & Concerning Richard Samble his Convincement Lyfe & Death, It is therefore agreed by this Meeting that the said written Papers...bee sent back & Recommended to the said Quarterly Meeting of Cornwall and alsoe to the Quarterly Meeting of Devon, for thm to peruse, or Intrust some faithful Friends in their Meetings to peruse them. And to leave out and Correct, and Amend any parts or Papers thereof, as they shall see Cause which when they have so done they may Reterne them to this Meeting & their sence Thereupon by some safe Hand.*

*Although no members of the Meeting were involved in Cornwall or Devon, this minute offers a glimpse into a mutual community of readers, editors, and even censors on some level: authority was entrusted to members of the meetings that would have known Richard Samble personally.*

What might a Quaker letter of rejection look like? See below for one from 1680, responding to a series of papers Judith Boulby wrote after the 'Glorious Revolution' of 1688. The first is entitled *Woman Uncircumcised in heart*, which they do not find a standalone work worth printing. For the second work, *To the Magistrates*, in the Meeting's minutes they condemn the work as too prophetic, including "severall severe ancient p[ro]phesys applied to England" which the Meeting feared might get Judith into trouble [7th 12th mo [January] 1689/9]. But after two insults comes a half-hearted compliment: they accept her final paper for manuscript circulation, if she is willing to take into account their edits. The Meeting's rejection of Judith's epistle *To the Magistrates*, on the ground of her prophesying tone shows how far Quaker printing had strayed from its initial agenda: her "severe" prophesies would have perfectly suited the Quaker of the 1650s.

*To Judith Boulby  
London the 18th 4 mo 1690  
Dear Judith*

*Our Loves in the Blessed Truth Salutes thee - This is to let thee know that we have read the papers thou left with us to be viewed and Printed if we thought meet. Now as to that to the Woman Uncircumcised in heart, we think it not dependent with it Self; For such as Paint, Adorne, and Dress like Jezebel are farr from making clear the outside. And as to that To the Magistrates, We Judge it not a fitt time to print much upon that Account in this time of peace and quietness - But as to the 3d To the followers of the Lamb - We have made some little alterations in it as thou wilt see, which if thou sees Meet, thou mayest give forth coppies of it, it being short, soe in the Love of God We rest thy thy Friends and Brethren in the Truth.*

*S. Crisp, S. Waldenfield, J. Vaughton, E.B., B. Antrobus, J. K., P. Livingston, J. Field*

ing the Spirit.' A Review of Quaker Control over their Publications 1672-1689." *Journal of Ecclesiastical History* 33 (January 1982) 72-88.

2. Mercurius Politicus has published an excellent article on recycled woodcuts, including this one from title page of *The Quakers Dream: or, the Devil's Pilgrimage in England* (1655). It was also used to negatively depict Ranters in 1650, and Shakers in 1651. The reuse of the woodcuts in pamphlets attacking religious dissidents is especially fitting, given that the Quakers were seen as the latest upstarts in a long line of religious upstarts, particularly the Ranters, and in Ephraim Pagit's exhaustive *Heresiography*, Quakers and Shakers are conflated.

3. For a discussion of the theoretical boundlessness of belief in the Inner Light, see Hilary Hinds' *George Fox and Early Quaker Culture* (Manchester and New York, Manchester UP, 2011). Hugh Barbour and Arthur Roberts distinguish the Quakers as prophetic rather than mystical: "In the prophetic experience, unlike that of most mystics, the Spirit leads men in concrete human life and within history," *Early Quaker Writings 1650-1700* (Grand Rapids, MI, William B. Eerdmans, 1973) 25. Their definition dovetails nicely with the trajectory of Quaker printing.

4. To this day the definitive account of the development of Quakerism, including the persecution of Quakers, can be found in William C. Braithwaite's old-school, sweeping two volume account: *The Beginnings of Quakerism* (London: Macmillan and Co, 1912) and *The Second Period of Quakerism* (London: Macmillan and Co, 1919), covering the period up to 1725, also see Joseph Besse's three-volume *Collection of the Sufferings of the People Called Quakers* (London: Luke Hind, 1753).

5. Restoration censorship laws were the harshest to be imposed in the kingdoms, but Quaker printing is a testament to how weak those laws were in practice—the government truly could not scale back the explosion in printing that the Civil War had made possible. See for instance O'Malley 'Defying the Powers and Tempering the Sprit, 73-74, and Fraser, David. "William Penn and the Underground Press," *William Penn's Published Writings, 1660-1726: An Interpretive Bibliography. The Papers*

of William Penn, Vol 5. (Philadelphia: UPenn Press, 1986).

6. Just a few examples, Fox, George. "Epistle 291 [On Women]" *A Collection of Many Select Epistles to Friends...* (London, T. Sowle, 1698); Bathurst, Elizabeth, *The Sayings of Women...* (London, printed and sold by Andrew Sowle...1683); Bryn Mawr College's online exhibition of Quakers and Slavery; John Beller's writings on prisons and mental health; *An Epistle to Friends of the Yearly, Quaterly, and Monthly Meetings; concerning the Prisoners, and Sick, in the Prisons and Hospitals of Great Britain* [No Printer, place, or date, c. 1724].



# Back to the Neotechnic Future: An Online Chat With the Ghost of Lewis Mumford

by Aaron Sachs

Conducted by Aaron Sachs,  
Cornell University, April 2014.<sup>1</sup>

Mumford, the great urban theorist, architecture critic, and cultural historian, has been dead for almost a quarter century. But I've been spending so much time with his work over the last couple of years that I sometimes have hallucinations in which he speaks to me in sentences from his books. (That's normal for scholars, right?) He was so broad-minded that his words seem germane to numerous situations. Indeed, the relevance of his thinking to the 21st century has reinforced my suspicion that we have not entered a completely new "postmodern" era but are merely experiencing an intensification or radicalization of certain modern trends—trends that Mumford analyzed back in the 1920s and 30s with a bracing freshness. And yet, some developments—the Internet, most importantly—do seem

utterly novel. What would Mumford have made of cyberspace?

At least one fan of his work thinks it's pretty obvious. In the 2010 re-issue of Mumford's *Technics and Civilization*, put out by the University of Chicago Press, a publisher's note warns that the Press chose not to include Mumford's 15 pages of illustrations, explaining that "it is not practical to reproduce those images here—nor is it necessary, in an

The image above is one of Mumford's original illustrations. Mumford's caption for this image was as follows: "The printing press was a powerful agent for producing uniformity in language and so, by degrees, in thought. Standardization, mass-production, and capitalistic enterprise came in with the printing press; and not without irony, the oldest known representation of the press, shown here, appeared in a *Dance of Death* printed at Lyons in 1499" (p. xxii).



age when readers can find the same, or similar, images on the Internet (an invention Mumford would have loved)."

But would Mumford have loved the Internet? *Technics and Civilization* itself features some intriguing answers. The text turns eighty this year, and the voice behind it sounds a bit grumpy, but still quite... what's the word? Animated?

Mumford was perhaps the most prominent public intellectual of the first half of the twentieth century. He's made a comeback recently among environmental scholars, thanks largely to his elaboration of a kind of bioregionalism. And he could surely be useful to those who analyze cities and technology. In *Technics*, he famously divided modern human history into three key periods: the promising eotechnic age, characterized by humble institutions like grist mills and by a general sense of sufficiency; the devastating paleotechnic age, when industrialism took hold and mining the earth became a defining human activity; and the gradually dawning neotechnic age, the era of distributed energy, lighter materials, and environmental balance. Well, two out of three neotechnic attributes ain't bad, right?

I found Mumford's ghost in the Bleeping Computer chat room.



**Aaron Sachs**

Mr. Mumford, welcome to the new neotechnic!

**Lewis Mumford**

To the extent that neotechnic industry has failed to transform the coal-and-iron complex, to the extent that it has failed to secure an adequate foundation for its humaner technology in the community as a whole, to the extent that it has lent its heightened powers to the miner, the financier, the militarist, the possibilities of disruption and chaos have increased.<sup>2</sup>

**Aaron Sachs**

But surely, Mr. Mumford, you acknowledge the democratic promise of the Internet? Surely you find technologies like email to be more connective than disruptive? Paperless offices, instant communication, social media buttressing cultures of protest, electric cars, biotechnical design; it's as if

the budding technologies you identified 80 years ago have finally come into full bloom.

**Lewis Mumford**

The gains in technics are never registered automatically in society: they require equally adroit inventions and adaptations in politics; and the careless habit of attributing to mechanical improvements a direct role as instruments of culture and civilization puts a demand upon the machine to which it cannot respond.

**Aaron Sachs**

Of course—I couldn't agree more: no one is pushing technological determinism here. But I'm surprised by your gloomy tone. One of the reasons your work has endured is that you were always constructive, avoiding the relentless negativity of strict antimodernism and anticapitalism. Didn't you see the rise of the neotechnic, even in the '30s, during the Depression, as offering hope, as renewing an older tradition of recognizing limits and working within them?

**Lewis Mumford**

Indeed, instead of simplifying the organic, to make it intelligibly mechanical, as was necessary for the great neotechnic and paleotechnic inventions, we have begun to complicate the mechanical, in order to make it more organic: therefore more effective, more harmonious with our living environment.... Once the organic image takes the place of the mechanical one, one may confidently predict a slowing down of the tempo of research, the tempo of mechanical investigation, and the tempo of social change, since a coherent and integrated advance must take place more slowly than a one-sided unrelated advance.

**Aaron Sachs**

Yes! I figured you would be a fan of the slowness movement. I can picture you at your homestead in upstate New York, going for long walks, picking fruit from your orchard and vegetables from your garden, and engaging with the wider world by exploring the Internet. Isn't it amazing how easy it is for people to contribute to our culture now? There are so many creative thinkers out there, not just living simpler, more conscientious lives but also blogging about it, sharing information, helping to shape a slower, more gentle society.

**Lewis Mumford**

What we need, then, is the realization that the creative life, in all its manifestations, is necessarily a social product ... . The essential task of all sound economic activity is to produce a state in which creation will be a common fact in all experience: in which no group will be denied, by reason of toil or deficient education, their share in the cultural life of the community.

**Aaron Sachs**

OK, now we're getting somewhere. Down with the digital divide! You were right, of course, to point out that we still have a dirty, volatile, unjust energy system, but computers are so efficient now, and such powerful tools, that plugging them into the global network clearly represents a social good. It's the Internet, as Bill McKibben argues, that will allow communities to cut back and ease off without getting bored or reverting to a narrow traditionalism. That's the balance we need—between acknowledging limits and thinking expansively—if we want to come together and solve new technical challenges like global climate change.

**Lewis Mumford**

But these mechanical aids to efficiency and cooperation and intelligence have been mercilessly exploited, through commercial and political pressure ... . We have multiplied the mechanical demands without multiplying in any degree our human capacities for registering and reacting intelligently to them. With the successive demands of the outside world so frequent and so imperative, without any respect to their real importance, the inner world becomes progressively meager and formless; instead of active selection there is passive absorption ending in the state happily described by Victor Branford as “addled subjectivity.”

**Aaron Sachs**

Look, I know you've always had a pretty strong contrarian streak, but I'm trying to find some common ground here. Wouldn't you acknowledge that your frame of reference is a bit out of date? Nothing in the 1930s even hinted at the sophistication and power of the Internet. The world may have been shrinking by then, but now it's literally at your fingertips; every time you log on, it's as if you're connecting yourself to a solidarity ma-

chine. I'd argue that subjectivity has actually been bolstered by electronic networking.

**Lewis Mumford**

One further effect of our closer time co-ordination and our instantaneous communication must be noted here: broken time and broken attention. The difficulties of transport and communication before 1850 automatically acted as a selective screen, which permitted no more stimuli to reach a person than he could handle ... . Nowadays this screen has vanished ... . It becomes more and more difficult to absorb and cope with any one part of the environment, to say nothing of dealing with it as a whole.

**Aaron Sachs**

Well, speaking of screens: maybe this conversation would go better if we could see each other? Do you ever use Skype, Mr. Mumford? Or FaceTime?

**Lewis Mumford**

When the radio telephone is supplemented by television, communication will differ from direct intercourse only to the extent that immediate physical contact will be impossible; the hand of sympathy will not actually grasp the recipient's hand, nor the raised fist fall upon the provoking head.

**Aaron Sachs**

You know, Mr. Mumford, tone can be really hard to read in this medium. I'm not sure what you meant by that last comment, but I feel pretty strongly that I'd like to hear your voice. Do you have a phone up there? Can I call you?

**Lewis Mumford**

One is faced here with a magnified form of a danger common to all inventions: a tendency to use them whether or not the occasion demands.

**Aaron Sachs**

I apologize. Can we just—

**Lewis Mumford**

What will be the outcome? Obviously, a widened range of intercourse: more numerous contacts: more numerous demands on attention and time.

Aaron Sachs

OK, I get it. We're all busy. But now you're starting to sound like a knee-jerk neo-luddite. Or a broken record. Or maybe a cranky robot. Come on: give this a chance. You're not being true to your own worldview.

Lewis Mumford

Communication between human beings begins with the immediate physiological expressions of personal contact, from the howlings and cooings and head-turnings of the infant to the more abstract gestures and signs and sounds out of which language, in its fullness, develops. With hieroglyphics, painting, drawing, the written alphabet, there grew up during the historic period a series of abstract forms of expression which deepened and made more reflective and pregnant the intercourse of men. The lapse of time between expression and reception had something of the effect that the arrest of action produced in making thought itself possible.

Aaron Sachs

Hey, Mr. Mumford, thanks for the lecture. Right. All of us young instant messengers are basically thoughtless ... . But let me try one last angle. Don't you yourself say, in *Technics and Civilization*, that neotechnic developments are leading us "toward a dynamic equilibrium" and a more resilient culture, that in fact "wherever neotechnic instruments exist and a common language is used there are now the elements of almost as close a political unity as that which once was possible in the tiniest cities of Attica"?

Lewis Mumford

Lewis Mumford is no longer in this chat room. He clicked an interesting-looking link and is now answering a questionnaire that promises to determine what career path he would have followed had he lived in the Middle Ages.

Aaron Sachs

Seriously?

Lewis Mumford

LOL!



## Notes

1. This chat is in part inspired by E.B. White's short essay, "The Retort Transcendental," which appeared in the *New Yorker* on April 4, 1942 (p. 12).

2. Lewis Mumford, *Technics and Civilization* (Chicago: University of Chicago Press, 2010; orig. 1934), 213. All the rest of Mumford's lines in this chat (except the two obvious fabrications at the very end) are quotations taken from *Technics*. The subsequent passages, in order, come from the following pages: 215; 367 and 372 (I've added the word "indeed" at the beginning of this quotation); 409-10; 273 (I've added the word "but" at the beginning of this quotation); 272; 239-40; 240 (two in a row); 239; and 429 and 241.





The real-life rats of NIMH.

*Space Cadet Thermos, 1954, National Museum of American History, 2003.3070.18.02.*

## Space Cadets and Rat Utopias

by Laura Martin

In 1956, researchers Leonard J. Duhl and John B. Calhoun organized a meeting to discuss space. Not outer space, as the year might suggest, but earth space. Duhl and Calhoun, both posted at the National Institute of Mental Health, wanted to know whether the arrangement of objects in the physical environment affected human well-being. Their choice of meeting title was not subtle; they called it “The Conference on Social and Physical Environmental Variables as Determinants of Mental Health.” But the seventeen invited participants—psychologists, sociologists, ecologists, and one “social physicist”—preferred to call themselves “The Space Cadets.”<sup>1</sup>

At the NIMH, Duhl specialized in mental health programming. He was a “small, tweedy, quiet-spoken” man who had volunteered for the Public Health Service during the Korean War before finishing his psychiatric training at the Menninger

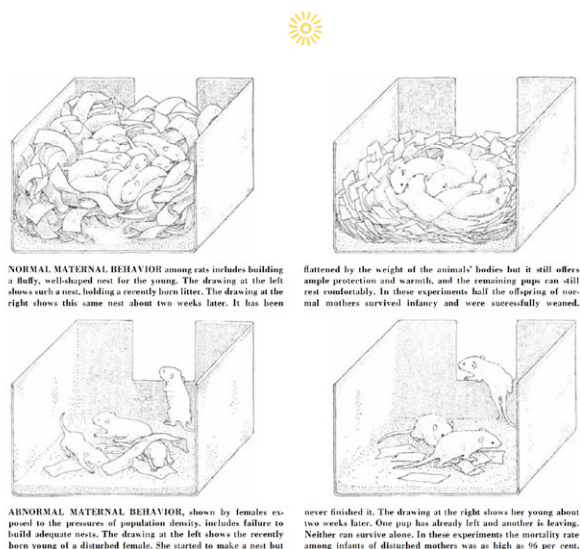
Clinic, in Topeka, Kansas. Calhoun, meanwhile, trained as a zoologist, was studying the social behavior of rats. He began this work in 1947, when a neighbor in Towson, Maryland, agreed to let him build a rodent enclosure behind his house. Calhoun designed experiments to study how population density affected social behavior. The experimental rats enjoyed a world free of predators, disease, and hunger. Their only restriction was space. He called the quarter-acre rat enclosure a “rat city.” He called the room-sized enclosure he would later construct at the NIMH a “rodent universe,” a “mouse paradise,” a “rat utopia.”

But the trajectory of rat utopia soon sobered Calhoun. The eager rodents did not seem capable of regulating their population size in the long-term. As they reproduced and the pens overflowed, Calhoun noted that male rates became aggressive, moving in gangs and attacking females and

young. Some became exclusively homosexual. Female rats, meanwhile, abandoned their infants. The crowded mice had lost the ability to coexist. One of Calhoun's assistants renamed the "rat utopia" "rodent hell."<sup>2</sup>

Calhoun saw in his rats the decline of future society, evidence that inner city crowding led to rioting, crime, malaise, and political radicalism: the obsessions of postwar American academics. He wrote up his results in a *Scientific American* article that he titled "Population Density and Social Pathology." The article became one of the most widely-cited papers in psychology. Like Pavlov's dogs and Skinner's pigeons, Calhoun's rats became exemplars for human behavior. His experiments suggested a density beyond which rat society disintegrated, and—to Calhoun and his colleagues, at least—the parallels with human society were clear.<sup>3</sup>

Time might have obscured the tale of Calhoun's rats, if not for publication of the 1971 children's book, *Mrs. Frisby and the Rats of NIMH*. The book tells the story of a widowed field mouse, Mrs. Frisby, who asks a group of former laboratory rats to help her rescue her home from the farmer's plow. (It also details the history of the rats' escape from the laboratory and development of a technological society.)



A figure from Calhoun's 1962 paper, illustrating the behavior of "normal" and "abnormal" mother mice.

Image from John B. Calhoun, "Population Density and Social Pathology," *Scientific American* 306 (1962): 139-148.

I first encountered the stenotype transcripts of "The Space Cadets" while at the University of Georgia's Hargrett Rare Book & Manuscript Library. I was there researching ecologist Eugene Odum, one of the popularizers of ecosystem theory, whose archives have yet to be fully processed. I had already sifted through troves of odd objects: ashed birds, skulls, Kodachromes, coral from the Pacific Proving Grounds, Odum's pants (the potential radioactivity of the coral from Bikini Atoll concerned me until I found, twelve boxes later, a form stating that the samples had been deemed safe to handle in 2007).<sup>4</sup>

Overwhelmed, I decided to spend an afternoon looking at the Ecological Society of America's archives, which are also housed at Hargrett Library. It was in this collection that I stumbled upon a letter from Edward Deevey, a former ESA president, to, well, to me. It read:

The file I'm sending to the archives has been sitting in a storeroom for the 14 years I've been at Florida. It contains a lot of dross, because Duhl send us xeroxes of everything he read, but I believe the file of stenotypic transcripts is complete, and somehow, someone has to pay attention to the role of social science in forming the research program of human ecology. Of course this panel was only one of the more visible of many "invisible colleges" that contributed to the subject, but if it's only worth a footnote in a history of 20th-century ecology, it's at least an interesting footnote.

For the future historian of ecology, these activities cover pretty well the state of the science in the 60's, and indicate the directions in which a number of leading ecologists were trying to push it.<sup>5</sup>

The note threw me. Edward Deevey died in 1988, but here he was, speaking to me. And here I was, making assumptions about him and his colleagues, what motivated them, how they spent their days.

The Space Cadets met twice a year from 1954 to 1966. From seventeen founding members, the

group eventually grew to two hundred panelists. Edward Deevey recounted: “We met at [the National Institute of Health], or in some hotel, usually the Dupont Plaza; entertainment at buffet suppers was fabulous, but the conversation was more so.” Other long-term members were Duhl, Calhoun, the psychiatrist Erich Lindemann, the urban economist Harvey Perloff, the sociologist Herbert Gans, the philosopher Scott Buchanan, the biomathematician Nicolas Rashevsky, the physicist John Q. Stewart, and the urban planner Richard Myer.

At first, conversation centered on two questions: What was mental health? And what was the place of federal planning in mental health? Or, more specifically: Were insights from the mental health of individuals applicable to the collective? And was planning compatible with democracy? At stake in these conversations was the question of whether social scientists could contribute to building the future world. If recent advances in psychology could be generalized to the collective, then the Space s could collaborate to build better cities.

But not all of the Space Cadets agreed that social behavior could be modeled. At the October 22 meeting, in 1959, John Seeley of the Alcoholism Research Foundation and Thomas Gladwin of the NIMH sparked a debate on the appropriate use of scientific models in studying “social adaptation”:

Dr. Seeley

[...] this whole dramatic operation takes place inside History, over which, in its large movement, we have no control, which is a single, unique, unreproducible act, utterly unlike the experimental model. [...] The closer we approach to the model of the machine or the biological machine, the more we must lead ourselves astray and the more we must turn our attention away from that which we have come here precisely to do, namely to insure that human life will be different because of our being here from what it might otherwise have been, by deliberation, by choice, by something that is as far from adaptation as anything I can imagine.

Unsurprisingly, virtually all of the participants were men. On rare occasion, individual women were invited to participate from community organizations.

Dr. Duhl

You have silenced the group.

Dr. Seeley

Only for a moment.

Dr. Gladwin

I wonder, Jack, why you are so concerned. It appears to me that every attempt to approach society, whether scientifically or otherwise, involves the selection of a limited number of dimensions, a restriction in the total complex perspective. If you are Karl Marx you look at it in terms of economics; if you are Freud you look at it in terms of conflict and resolution of conflict; others do it in still different ways. Whether we try to set up an organic or a mechanical model, there will be those who feel that it is all-inclusive, but these are not usually the people whose opinions we would respect anyway. This is just one way of working toward



Ashes of Parula Warblers in a fruitcake box, one of many treasures in the Eugene P. Odum papers at the Hargrett Rare Book & Manuscript Library. Courtesy of Hargrett Rare Book and Manuscript Library / University of Georgia Libraries. Hargrett Rare Book & Manuscript Library, MS3257, series 1, carton 149.



a series of successively closer approximations, through the isolation of relevant variables and modes of description, which will enhance our understanding of our society. As I see it, it doesn't restrict our range of choice. It simply gives us another mirror in which to see society reflected, another filter which filters out some things and lets other useful things come through.

As the years passed, new concerns crept into the Space Cadets' conversations: nuclear annihilation, birth control, racial integration, communism, computers, the "problem of ulcers and coronaries in terms of social climbing in suburbia." At one session, the group discussed The Fund for the Republic's Center for the Study of Democratic Institutions' 1960 report, *Community of Fear*, which imagined a future cave-dwelling society living in cities dug underground to escape the hazards of nuclear war. The Space Cadets wondered: Would there still be social anxiety underground?

Leisure time was another sticking point. As Dr. Gans proclaimed in a 1961 meeting, "a generation ago, boating and golf were upper-income group sports; today, almost everyone of middle income who is not afraid of the water or too lazy to walk the greens can participate in both." Summer theatre, art movies, foreign travel, do-it-yourself activities, photography and painting, television. A number of critics argued that "citizens" (read: upper mid-

dle class white families) would soon be unable to psychologically cope with further increases in leisure time. The Space Cadets discussed "weekend neurosis," a condition that existed mostly among professional people "for whom work is so pressing or exciting that all other forms of activity pall."

#### Dr. Feiss

If we figure an 8-hour day, with five workdays, roughly 8 hours of sleep—some of us don't get it—we have another 8 hours which is also undesignated, which, theoretically, is used in family activity or otherwise, or a total of another 153 days. The two together mean 157 days of the year, out of 365, in which we have leisure time or unassigned time. That is a devil of a lot of time.

Dr. Gans's research suggested that "the pleasures of being outdoors are as satisfying in a small backyard as they are in the majestic environment of a National Park landscape." Perhaps the urban individual was subject to a "sensory overload" to which he or she was not adapted.

#### Dr. Seeley

I think this presses differentially on the man and woman. I think the man in many suburbs would say "I see enough diverse kinds of people during the day" (and this is probably true) "and when I come home at night I want to be among my own." The isolated woman, in some suburbs at least, says "I never see anybody different from myself. Let me go out—let me go to the club—let me play golf—let me play tennis," and a number of other things.

Calhoun, for one, believed there was a natural limit to the number of social interactions an individual rat—or human—could psychologically handle, so that large groups over a certain size—twelve, to be exact—bred discontent. Put more than twelve in a space and unwanted interaction would lead to hostility and withdrawal, and ultimately, social breakdown. A fan of H. G. Wells and George Orwell, Calhoun put stock in the alternative futures those authors imagined.

But the bomb loomed large.



Students in the Department of Geography and Community Planning at Appalachian State University in 1977. University Archives, Appalachian State University, General Picture Files, 2004.040, Box 10, Geography and Planning, C14.2.2.4.

Mr. Poston

All this concern about leisure time always bothers me because I feel that we are living in an age when 25 years from now our civilization may not exist. I think that we are currently engaged in a world struggle for survival, and I don't think there is much time. So that when people talk about the Americans lounging around in parks and worrying about whether or not there are enough swimming pools, that sort of thing concerns me.



Today the Space Cadets are remarkable for exploring the confluences of psychology, ecology, and urban planning. Although psychology and ecology still occasionally interface (think *Last Child in the Woods* or “biophilia”), sociobiology peaked in the 1970s, and ecologists rarely meet with their urban planning equivalents, landscape architects. Ecology, a field founded to resist disciplinary borders, is now a well-defined discipline that deals with rats but not humans.

Human population growth, it seems, is the only interest of the Space Cadets that has remained central to ecology and conservation biology. Many believe that disaster looms in the future, that humans will overflow their earth as Calhoun's rats overflowed their pens. Others believe in the power of technology to overcome famine and fear, a technological utopia.<sup>6</sup>

And so it was no surprise that a September 2013 New York Times Op-Ed article entitled “Overpopulation is Not the Problem,” caused a kerfuffle. Erle Ellis, an ecologist at the University of Maryland, Baltimore County, wrote:

Many scientists believe that by transforming the earth's natural landscapes, we are undermining the very life support systems that sustain us. Like bacteria in a petri dish, our exploding numbers are reaching the limits of a finite planet, with dire consequences. Disaster looms as humans exceed the earth's natural carrying capacity. Clearly, this could not be sustainable.

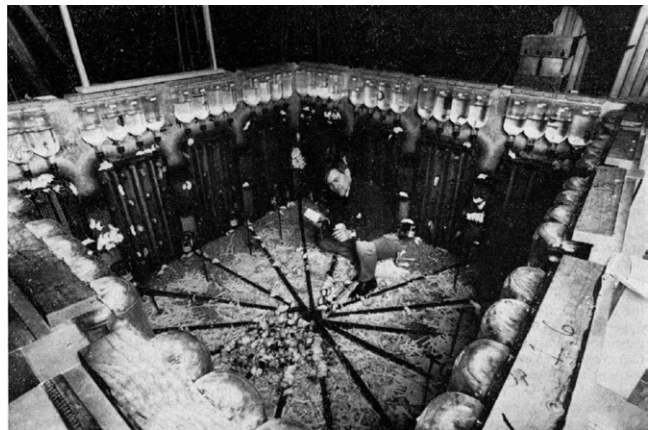
But Ellis went on:

This is nonsense. [...] The conditions that sustain humanity are not natural and never have been. Since prehistory, human populations have used technologies and engineered ecosystems to sustain populations well beyond the capabilities of unaltered “natural” ecosystems.

Joel Cohen, Daniel Schrag, and William Clark, professors at Columbia University and Harvard University, respectively, retorted:

It is not possible to predict precisely what some human choices may lead to, or whether some future environmental changes may be beyond human control. It is clear, however, that every additional billion people constrain further the choices available for life on earth, human and otherwise.

Such debate nests within a larger contemporary debate over “the Anthropocene.” The magnitude of global change—an umbrella term that includes rising tropospheric CO<sub>2</sub> concentrations, increasing UV-B irradiation, species invasion, eutrophication, radionuclides in oceans, and biodiversity loss—has prompted some ecologists to use the term “Anthropocene” when referring to the present geological age. (The International Union of Geological Sciences continues to use the term Holocene.)



John B. Calhoun in the rat universe, 1970.

John B. Calhoun, “Death Squared: The Explosive Growth and Demise of a Mouse Population,” *Proceedings of the Royal Society of Medicine* 66 (1973): 80-88.

Few scientists contest the magnitude of human impacts on the Earth. Humans consume about one-third of all solar energy converted to plant matter, and their actions directly impact 75 percent of the terrestrial world—or, if we take climate change into account, the entire world. But many contest what it means to adopt the term Anthropocene. Rather than the “cheery” Anthropocene, E.O. Wilson prefers to call Earth’s new era of history the Eremocene: the Age of Loneliness. Elsewhere, Erle Ellis has called the Anthropocene “an opportunity we should embrace.”

Fifty years ago, the Space Cadets, too, were divided over whether the future was dismal or bright. In 1948, two books were published that inspired a “neo-Malthusian” debate on population and the environment: Fairfield Osborn’s *Our Plundered Planet* and William Vogt’s *Road to Survival*. While attending college in the early 1950s, Paul R. Ehrlich heard Vogt lecture. The lecture resonated, and Ehrlich went on to publish *The Population Bomb* in 1968. In it Ehrlich warned of mass famine and social upheaval in the 1970s and 1980s due to overpopulation. *The Population Bomb* went on to sell two million copies within its first two years and go through twelve re-printings, selling more copies than Rachel Carson’s *Silent Spring* (1962).

Calhoun and some of his fellow Space Cadets rejected Ehrlich’s “dismal theorem”—the idea that each additional human would have a negative

impact on the environment. While the media portrayed the future as one of malnutrition, disease, and misery, the Space Cadets asked how to control human behavior while not restricting an individual’s freedom of action. The way to avoid the future necessity of individual psychotherapy, they contended, was to manipulate the present environment. And to do this they needed first to understand the relationship between space and behavior. Different arrangements of yards, housing units, streets, and commercial centers could, perhaps, ward off disaster.<sup>7</sup>

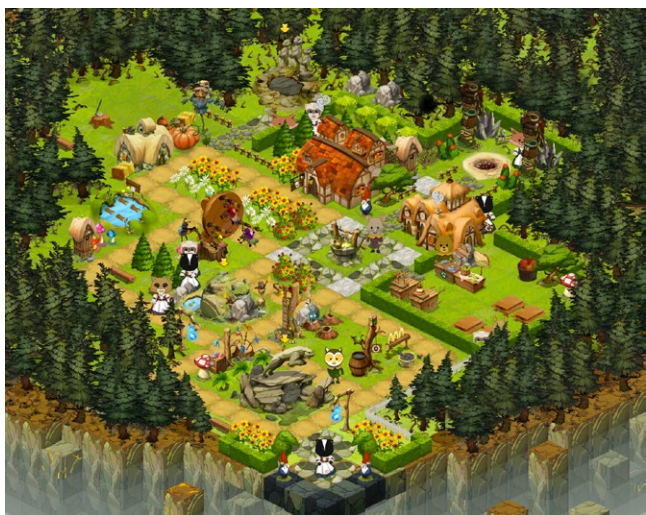
In his early experiments, Calhoun believed he had observed innovation in rat society. When building a new burrow, some rats did not simply dig out the dirt as they went, “as any normal rat would do”; rather they packed it into a large ball that they then rolled out. This innovation had come not from the socially dominant individuals, but from a disorganized and withdrawn group of subordinates. Inspired by this example, Calhoun attempted to design rodent universes that would produce “creative deviants.”<sup>8</sup>

Calhoun also believed that future technologies would change the nature of the environments in which social interactions occurred. He predicted that a “communication-electronic revolution” would occur in 1988. As the availability of physical space declined, human society would extend into “conceptual space” to better use natural resources while ensuring that each individual maintained a limited number of social interactions.

That part sounds about right.



I returned to the Odum papers grateful for the glimpse that Deevey had given me into the concerns and ambitions of a generation of social scientists. It had kept me away from Facebook, that leisure destination of the post-communication-electronic-revolution workday. As of 2010, there were thirty times more farmers on the Facebook game *FarmVille* than there are in the United States. In the spirit of the Space Cadets, we might also ask how many acres those *FarmVille* farms comprise in “conceptual space.”



Screenshot from the game “Ravenwood Fair” on Facebook.  
Wikimedia Commons



In his discussions with the Space Cadets, Calhoun struggled with the limitations of models. Could rat behavior stand in for human behavior? Was an overflowing pen at all like a city? Was behavior determined by population size or by individuals? Such questions were unresolvable. But it was important to ask them.

Like the Space Cadets, today's Anthropoceners are attempting to model the present world with an eye towards the future world. Today's Anthropocene discourse constitutes a teleological argument—it posits that past human action has set us on an inevitable trajectory that ends with the Anthropocene. (If this last point is unclear, ask: When will the Anthropocene end?)

Anthropoceners are interested in the universal, not the particular. They seek global patterns. And so they aggregate the impacts of human lives. But while generalizations are often generative, patterns alluring, the Anthropocene model is blind to the distribution of power. It asks what—what are the consequences of human action—and not who—who is acting, who is responsible, who is suffering. The Space Cadets modeled the disenfranchised with rats. Who are the Anthropoceners modeling? And for whom is their future world?



## Notes

1. Congressional subcommittees were held and the National Mental Health Act was signed into law in 1946. On April 15, 1949, the NIMH was formally established. Funding for the NIMH grew slowly and then, from the mid-1950s, dramatically. In 1958, the Space Cadets's conference was renamed "Conference on Ecological Manipulation of Mental Health."

2. Calhoun began his career as an animal ecologist. He was trained in zoology at Northwestern, and in 1946, moved to the Johns Hopkins School of Hygiene and Public Health, where he was to study ways to control Baltimore's rodent population. Population was a hot topic in ecology at the time. W. C. Allee, Raymond Pearl, Charles Elton, and others were studying whether the rise and fall of numbers over time was correlated with climate,

food supply, predation, or an internal regulatory mechanism. At Hopkins, one of Calhoun's colleagues, John J. Christian, was particularly interested in whether stress—fight-or-flight responses in particular—were maladaptive in the long term. See Sharon Kingsland, *Modeling Nature*.

3. An expanding subfield of Science and Technology Studies explores the construction of biological model species like mice and flies. For example, see Adele Clarke and Joan Fujimura, *The Right Tools for the Job*; Robert Kohler, *Lords of the Fly*; Rachel Ankeny, *The Conqueror Worm*; I. Löwy and J. Gaudillière, "Disciplining Cancer"; Angela Creager, *The Life of a Virus*. Much of this scholarship frames model organisms as the result, rather than the cause, of scientific consensus. As Creager (2004) writes, "for everything from techniques and instruments to classification and building schemes, and even human organ donation—achieving standards requires intense negotiation over what material, organizational, and conceptual categories can and should be deliberately controlled and therefore taken for granted" (p. 15).

4. The papers of Eugene P. Odum can be found across multiple accessions at the University of Georgia Libraries Hargrett Rare Book & Manuscript Library, Athens, Georgia, including 01-019, 97-044, 97-045, and MS3257.

5. The transcripts of the Space Cadets meetings can be found at the University of Georgia Libraries Hargrett Rare Book & Manuscript Library, Athens, Georgia, in acc. no. 97-061 boxes 61-64. Edward Deevey was an ecologist who analyzed lake sediment to study past climates, or, as G. Evelyn Hutchinson once described him, "the leading American bio-climato-geographical historian of the past million years."

6. A pamphlet that I picked up at the 2013 International Congress for Conservation Biology in Baltimore, Maryland, reads: "Growing human population fueled by immigration is the single greatest threat to endangered species survival in California [...] It is a choice between being politically correct or being ecologically correct. The Sierra Club must place ecological priorities before social priorities." Paul Watson, Sierra Club Director, March

2004, "To Hell with Butterflies, We Need Room for More People in California."

7. In his 1961 article, "Of Men and Mice and Moles," John W. Dyckman reviewed some of the Space Cadets' recent works. He noted Calhoun's studies of mass neuroses in rodents and Deevey's hypothesis that "congestion-neurosis" led lemmings to commit suicide in the sea. Urban planners, Dyckman continued, were split into groups that favored high density, intimate association, on the one hand, and low density, protected privacy on the other. The task facing urban planners, then, was to develop residential areas of densities that would maximize "sociability" in an age of profound isolation. Joel W. Hedgpeth. "A fit home for Earth's noblest inhabitant." *Science* 164: 666-669.

8. Many of the Space Cadets believed that self-reliance was a key to successfully constructing environments, and thereby societies, that could cope with future conditions. They promoted "community development programs" that utilized the community as a means of "helping people to educate themselves in terms of values, and in terms of their capability to achieve the aspirations which they might have, or in the creation of new aspirations, and in becoming more mature responsible individuals."

9. My thinking here was influenced by the comments of Alan Mikhail, Harriet Ritvo, Karl Jacoby, James McCann, and Aaron Sachs, at the April 2014 Yale University conference, "New Perspectives in Environmental History."

CHAPTER THREE:

# The Politics of the Future







CORE would choke off the arterial highways connecting the city to the Fair—and thus, the city to much anticipated tourist dollars.<sup>1</sup>

The local and national press pounced on the story, devoting column inch after column inch, day after day, to the proposed protest—making the stall-in one of the best publicized protests never to occur. Commentators were quick to condemn the protests as unreasonable, dangerous, and even violent; angry letters to the editor poured in. Politicians were not far behind in their condemnations. Senators Hubert Humphrey and Thomas Kuchel warned in a joint statement that “illegal disturbances, demonstrations which lead to violence or to injury, strike grievous blows at the cause of decent civil rights legislation.” Richard Wagner, then Mayor of New York, likened the protests to a “gun held to the heart of the city,” which threatened more harm than “anything that Dixiecrat Senators can do in Washington, or that the forces of bigotry can do in this city.” A bit too eager to seize on public rifts in the civil rights movement, all were quick to distinguish the majority of “responsible Negro leaders” who remained true to nonviolence and kept their eyes on the prize (the Civil Rights Act) from those irresponsible few willing to bring “unnecessary inconvenience to others” to get their way—or at least get their names in the papers.<sup>2</sup>

All this press brought notoriety and publicity to the protest, but also ensured a swift response from the city and the World's Fair Corporation. Robert Moses' statement to the press was characteristically tough and terse: “The fair will not become a stage for irresponsible interference with visitors, secondary boycotts and demonstrations not related to the proper conduct of the fair.” Behind the scenes, meanwhile, in conjunction with the New York Traffic Commissioner Henry Barnes, a new law was swiftly passed stipulating a maximum penalty of thirty days jail time and a \$50 fine for any driver who might run out of gas on the highways of New York. The city also promised to keep a massive force of police, tow trucks, and a helicopter airlift at the ready along the major Fair thoroughways—a testament to how quickly and effectively money, time, muscle, and means could be put together by the ruling powers in New York when there was the political will to do so.<sup>3</sup>

**OUR PEOPLE DEMAND:**  
a confrontation between the Mayor and local civil rights groups on the following:

- 1. EMPLOYMENT** close down all construction sites immediately until the work force in that industry is fully integrated
- 2. SLUM HOUSING** begin an immediate “rent strike” throughout the ghetto areas
- 3. SCHOOLS** produce immediately a plan with a timetable for total desegregation of all schools
- 4. POLICE BRUTALITY** create a Public Review Board, selected by civil liberties, civil rights, and church groups to investigate complaints of police brutality

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**OR**

**STALL IN**

**AT THE WORLDS FAIR**

---

**WEDNESDAY, APRIL 22**

Starting at 7:00 A.M. until . . . ?

On the following parkways: Grand Central, Brooklyn-Queens, Belt, Interboro and Van Wyck

**HOW?**  
Put Your Car On Exhibit Anyway You See Fit . . .  
Run out of gas  
Stop and Check your engine  
Fix your flat tire  
SLOW DOWN and enjoy the scenery

**FOR MORE INFORMATION—Call CORE**  
Brooklyn — UL 7-9200    Bronx — LU 9-8409    New York City — MO 6-8400

Poster for Brooklyn & Bronx CORE  
World's Fair 'Stall-In.'  
Congress of Racial Equality

And thus it was: though it was quickly backed by CORE chapters in the Bronx, Harlem, Manhattan, Long Island, and Yonkers, along with college chapters at Queens College and Columbia University, the protest was not to be. National CORE opposed the protest, on the grounds that it violated CORE's established Rules for Action by not focusing in on a clear target, and prevented other chapters from pursuing more traditional protest tactics at the Fair (the picketing of particular pavilions, for example, which had been hastily planned by National CORE as an alternative to the stall-in). When the Brooklynites proceeded with their plans anyway, in defiance of National Chairman James Farmer's explicit instructions, the chapter was formally suspended. Without the backing—and the logistical capacity—of the national organization, the local chapters had little ability to pull off

a 2,000-car stall-in. Perhaps more to the point, the imposition of criminal fines and jail time for potential stallers-in likely had a chilling effect on those would-be volunteers looking to put their cars, and their cause, on exhibit.

The morning of the 22nd, under the gray and drizzling New York skies, journalists awaiting a massive highway tie-up found—to their rather smug delight—few cars and little traffic. At the fairgrounds, a rather orderly procession of several hundred activists organized by Farmer picketed several state and corporate pavilions, and were arrested; at President Johnson's speech during the opening ceremonies, a less orderly band of college students heckled, taunted, and chanted their way through the President's claim that "We"—Americans, that is—"do not try to disguise our imperfections and our failures. No other nation in history has done so much to correct its flaws." But a stall-in there was not.

On the other hand, neither were there huge crowds waiting to partake in the Fair's many futuristic wonders. Although Moses had anticipated opening day would bring a quarter million patrons through the Fair gates, by the mid-afternoon, scarcely more than 60,000 had visited Tomorrow-land. The bad weather was undoubtedly a factor. But so was the press around CORE's protest. The stall-in may have fizzled, but it hardly failed.



An anonymous activist at the CORE protest.  
Congress of Racial Equality

## Present tense, Futurama perfect

However radical, the tactic of the stall-in did not represent a total break with what came before it. In his keynote address at the annual convention of Martin Luther King Jr.'s Southern Christian Leadership Conference—an organization defined by its steadfast commitment to nonviolence, and perceived by the news media and the public as more moderate than radical—Reverend Wyatt Tee Walker all but suggested a nationwide stall-in. In the wake of the 1963 Birmingham church bombings (and subsequent violence) that killed six children, and with a comprehensive civil rights bill still more than a year off, it seemed like such means might ultimately be necessary. "Is the day far-off that major transportation centers would be deluged with mass acts of civil disobedience; airports, train stations, bus terminals, the traffic of large cities, interstate commerce, would be halted by the bodies of witnesses nonviolently insisting on 'Freedom Now'?" Such a protest, had it ever come to pass, would have far outstripped the World's Fair protest both in radicalism and in levels of disruption. Moreover, as numerous Southern congressmen were keen to point out in the midst of the stall-in uproar, the seemingly tame tactics of the Southern civil rights movement—sit-ins, pray-ins, marches, boycotts—were at least close cousins of the stall-in, if not more intimately related. From the perspective of those most affect-

I am, however, less likely than some to say that it completely succeeded. If the idea was to put the demands of the New York civil rights movement—and not a particular strategy of civil disobedience—"on exhibit," then the success was rather limited indeed. The vast majority of news coverage and public debate centered on the means; there was little, if any, debate about what it might mean to take the demands for quality, integrated housing, jobs, and education seriously, nor any movement forward on a civilian review board. Moreover, while being stuck in a traffic jam and avoiding the highway altogether might have the same effect on the Fair's attendance numbers and balance sheet, that is hardly true in terms of the average experience of the event. If a primary motivation for the protest was, as Purnell persuasively suggests, "to create a large enough traffic jam so that women and men trapped on highways that ran through some of New York City's most impoverished areas would be forced to observe, up close, the effects of institutional racism," then the non-stall-in seems to lack precisely this ability to disclose reality in a pressing and immediate way.



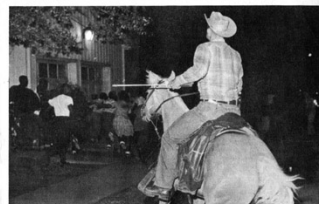
ed by it, good civil disobedience is always experienced as disruption.

But it wasn't just about the tactics. Everyone—politicians, journalists, Fair officials, ordinary citizens (not all of them white), and even a few of those other civil rights leaders who publicly condemned Brooklyn CORE—seemed baffled, and not a little bit angry, about the very idea of protesting the World's Fair at all, stall-in or otherwise. The site itself seemed oddly off-limits. When the stall-in failed to materialize, the protestors who did show up at the Fair received no small measure of the public ire—the National CORE-led pickets no less than the chanting youths at Johnson's speech. "The World's Fair has not been discriminating against anybody," complained one columnist in the Times. "It is not a seat of government. It has no authority to bring about civil rights reforms or correct wrongs in the social order. Its theme, 'Peace through Understanding,' in itself suggests sympathy with the just aspirations of all peoples. To make it the scene of various demonstrations, as Brooklyn CORE and perhaps other groups apparently intend to do, is to send the marchers to the wrong address."

It doesn't take an extraordinary feat of imagination to see it otherwise, though. If the New York World's Fair seemed to break with an established pattern of civil rights protest venues, it nevertheless offered no shortage of reasons—from the practical to the purely symbolic—to think it an obvious choice for a CORE demonstration.

First, it is not exactly accurate to say that civil rights groups had no claim of discrimination against the Fair, or that the Fair had no power to bring about the desired reforms—particularly in the area of employment. Several civil rights groups, including the NAACP, had been battling Moses since the early days of Fair development over black and Puerto Rican employment, to which Moses reacted in his usual way: by dismissing them as the bogus claims of agitators and "professional integrationists," which he would not or could not address. The Fair was also a 5-year-long

## HOW CORE VIEWS THE FAIR:



## SYMBOL OF AMERICAN HYPOCRISY

From all over the nation—from Mississippi, from Louisiana, from California, from Maryland, from Florida, from Illinois, from Missouri, from New York and Massachusetts CORE chapters have brought their grievances to the World's Fair. We contrast the **real world** of discrimination and brutality experienced by Negroes, North and South, with the **fantasy world** of progress and abundance shown in the official pavilions. For every new car we submit a cattle prod, for every chromium-plated decoration we submit the charred remains of an Alabama church and for the great steel Unisphere we submit our bodies—from all over this country—as witnesses to the tragedy of the Northern ghetto, as witnesses to the horror of Southern inhumanity and legalized brutality.

### CORE DEMANDS FROM:

**MISSISSIPPI**—An end to killing, an end to brutality, the simple right to vote for disenfranchised Negroes, equal representation at the National political conventions . . . in two words, **FREEDOM—NOW!**

**MARYLAND**—A new public accommodations law that does not endorse segregation in public bars and restaurants that do more than 51% of their business in liquor. **NEGROES CAN BE SERVED HERE AT THE WORLD'S FAIR—BUT NOT IN THE STATE OF MARYLAND.**

**NEW YORK STATE**—A \$1.50 minimum wage, integrated low-cost urban renewal, an end to hiring discrimination in public utilities, state-wide rent control, state-wide quality integrated education, state-wide civilian police review boards.

**LOUISIANA**—The right to vote, the right to live without fear, the right to eat, live and breathe where we please. An end to police brutality, an end to cattle prods, pistol-whippings and murder. **AN END TO SLAVERY!**

**ILLINOIS**—An end to Chicago's rat-strewn ghetto schools, jobs for everyone without regard to color, integrated low-

cost, well-constructed new housing—and an end to police brutality THAT WALKS THE GHETTO STREETS BOTH DAY AND NIGHT.

**FLORIDA**—The right to vote, an end to outright segregation and exclusion in public accommodations. A FLORIDA "PARADISE" FOR ALL.

**NEW ENGLAND**—Fair housing in Boston! Fair employment throughout New England! A viable plan for the creation of a quality, integrated school system.

**MISSOURI**—A state-wide fair employment and public accommodations law. Our people have been arrested, publicly denounced and subjected to fantastically excessive sentences in St. Louis. **THIS PAVILLION SYMBOLIZES A LACK OF FREEDOM IN THE MIDDLE WEST.**

**SCHAEFER BEER**—The Schaefer Beer Company is being boycotted in protest of their flagrant discrimination in hiring. **BOYCOTT THEIR PAVILLION IN SYMPATHY WITH HUNDREDS OF THOUSANDS WHO WON'T DRINK JIM CROW SCHAEFER BEER.**

**GENERAL MOTORS AND FORD**—An end to employment discrimination at Ford and General Motors plants and showrooms away from the city of Detroit.

**THE UGLY SPECTRE OF BIGOTRY AND DISCRIMINATION THROUGHOUT THIS NATION MAKES THIS WORLD'S FAIR BOTH LUDICROUS AND HYPOCRITICAL. THE MILLIONS OF DOLLARS IT COST MUST BE MEASURED AGAINST THE 22 MILLION AMERICAN NEGROES LIVING IN THE AGONY OF FIFTH-CLASS CITIZENSHIP BOTH NORTH AND SOUTH.**

CORE (Congress of Racial Equality) 38 Park Row, New York, N. Y. 10038 • CO 7-6270 • James Farmer, National Director

National CORE 1964 World's Fair Flier.

Congress of Racial Equality and Elliot Linzer,  
Queens College Civil Rights Archives



The CORE sit-in on the Triborough Bridge.  
Meyer Liebowitz, via CORENYC.org

public works project of unprecedented scale, requiring the cooperation and manpower of the unionized building trades—the same industry that Brooklyn CORE and other New York groups had been struggling in vain to integrate.

However, it was the *symbolic power* of the Fair and the image of the future it projected—not just their direct discrimination claims against the unions, nor the undoubted potential of the Fair as a media event—that captured the activists' attention. The New York City chapters of CORE had been struggling for years to make the reality of life in the ghettos of Bedford-Stuyvesant and Harlem visible for the rest of the city's residents through rent strikes, school boycotts, and—in a move that now appears as a clear precursor to the stall-in—trash dumps at Borough Hall and on the Triborough Bridge, the latter of which tied up traffic for 20 minutes by attempting to show the angry motorists a small slice of life in the ghetto. The Fair presented a perfect opportunity: as Herbert Callendar of the Bronx chapter of CORE explained, "The World's Fair portrays an image of peace, tranquility and progress—the American dream. We want to show that there is also an American nightmare of the way Negroes have to live in this country."<sup>4</sup>

Indeed, it is hard not to appreciate the perfect irony of creating a traffic jam as a protest of Robert Moses's Fair. Moses was the man who believed cities to be "created by and for traffic" (and who wasn't afraid to bulldoze a few neighborhoods to prove it). He was the mastermind and architect behind New York's congested highway system, and the urban planner associated with the notorious "urban renewal" and "slum clearance" programs of the 1950s (termed "Negro removal" by author James Baldwin).<sup>5</sup>

On its own, the World's Fair earned an early reputation for being the sort of traffic disaster to which the stall-in could only aspire, thanks to construction on the fairgrounds and on the surrounding highways. In 1962, *Time Magazine* claimed that, by that point, the Fair was renowned mostly for the "bumper-to-bumper embolisms the highway expansion program is causing in the borough of Queens"—a project that cost hundreds of millions of dollars, but famously turned Queens into "the world's biggest parking lot." Even after con-

struction had been completed, the Fair was automobile- and highway-centric, angling for middle class patrons coming in by car, rather than the local working-class on the 7 train.

Inside the fairgrounds, what would be criticized as the "Hard-Sell Fair"—a place defined by its "tacky, plastic, here-today-blown-tomorrow look, as if it were a city made of credit cards"—made the contrast between the American dream and its nightmare shadow more spectacularly visible. The Fair was a celebration of an infinitely consumable—but ultimately disposable—world; its dozens of buildings made to last two years and no longer, before being demolished again (at a considerable cost). There, General Electric's "Carousel of Progress" celebrated the conquering of the home by household electronics while the Ford Motor Company's "Magic Skyway" took patrons on a journey from "the world that was" to the "world that will be" via Mustang convertible. And, most poignant of all, at the Fair's most popular exhibit, General Motors' Futurama, spectators witnessed the wonder of a highway-ringed "City of Tomorrow," a "utopian metropolis" free from "slums or parking problems," while in a far-off jungle, a "road-builder" brought "progress and prosperity" by clear-cutting forests while leaving an elevated highway in its wake.

Denizens of Bed-Stuy, Harlem, the Bronx, and Queens might well have recognized the "road builder" as none other than Robert Moses—though, in their experience, prosperity was not forthcoming, and slums remained very much a reality. And so with the entirety of the future according to the World's Fair: it represented a temporality of present and future progress both out of step with the reality of inequality in 1964 America, and simultaneously implicated in it. And perhaps this is one reason why the stall-in was as controversial, divisive, and upsetting as it was: it threatened to interrupt a certain imaginary of progress, democracy, and freedom (wide open as the highway, headed toward the infinite horizon) with the perpetually, systemically-stalled reality of

To watch a promotional video for General Motors' Futurama ride, visit:  
<http://appendic.es/m/1q>

racial injustice, in which there were no innocent bystanders.

In the midst of the national outcry over the stall-ins, these powerful intuitive and metaphorical connections were all but obscured. Public statements from a few prominent figures in the civil rights movement drew attention to these layers of meaning—the Student Nonviolent Coordinating Committee’s John Lewis, Martin Luther King Jr., and even James Farmer participated—but seemed unable to shift the discourse. Ironically, it was Police Commissioner Michael Murphy, while criticizing the “shocking and disturbing” protests at the Fair, who said it best: President Johnson, alongside tens of thousands of fairgoers, had come “to the world of fantasy” only to “[encounter] the world of fact.”



## We pay a lot for our entertainment

By its own design, the Fair was practically ready-made for (over)-interpretation—the Avenue of Progress actually intersected with the Avenue of Commerce! The World’s Fair was meant to represent, exhibit, predict, and promote. It hocked visions of progress as product-placement, and spoke in the honeyed tones of a 646-acre advertisement for better living—a slum-less, traffic-free and strangely un-peopled city of the future, all in the midst of the slum-ridden, traffic-clogged, and population-dense New York City of the present. In Robert Moses’s own terms, the World’s Fair had to be “part theater, part traveling carnival, part insubstantial pageant and part permanent park.” More than a few snapshots offer themselves up as perfect metaphorical encapsulations of the moment—of the Fair or its host city, of civil rights and race relations, of America in the mid-sixties, quickly losing its idea of itself. The Fair is a thing overburdened by metaphor.

For that reason, if not for others, I should ignore the temptation to punctuate this essay with a metaphor. But I find that I cannot; there are just too many good ones on offer. And for this particular story about the clash between the America packaged and sold by the Fair and the one protesting at its gates, I can’t resist the animatronic Abra-



General Motors Avenue of Progress.  
Don O’Brien, via Wikimedia Commons

ham Lincoln standing in the Illinois Pavilion. In my defense, I wouldn’t be the first. Writing a month after the Fair’s opening, John Skow (underwhelmed, and apparently with tongue firmly in cheek) deemed the mechanical Lincoln “the very spirit of the New York World’s Fair. Not to see the animated Emancipator,” he continued, “is to fail to understand what the World’s Fair is about.”

Designed and created by engineers at the Walt Disney Corporation (“Imagineers” is the unfortunate term of art) for the ludicrous cost of half a million dollars, a mechanical simulacrum of the Great Emancipator was not only summoned from beyond the grave, but was reincarnated as a Cold War liberal. During the 1964 and 1965 seasons, spectators at “Great Moments with Mr. Lincoln” watched with amazement as a stunningly life-like Lincoln rose from his seat, turned his head ever so slightly, and delivered some sober words of wisdom: a short oration on liberty stitched together from excerpts of several different speeches. In a booming baritone, the Lincoln-bot intoned:<sup>6</sup>

The world has never had a good definition of the word liberty, and the American people, just now, are much in want of one. We all declare for liberty; but in using the same word we do not all mean the same thing.

The language of the World’s Fair script was updated and modified slightly from the original.



These words, from an 1864 speech Lincoln gave in Baltimore, are true enough to history—at least if your main concern is that Lincoln actually said them. But context matters, and in this case the words left out of the “animated Emancipator’s” speech are far from incidental. The real Lincoln, the historical Lincoln, speaking in the midst of the Civil War and on the heels of the massacre of black troops and their officers at Fort Pillow, went on to explain his reflections on the meaning of liberty in the following terms, redacted from the World’s Fair rendition:

The shepherd drives the wolf from the sheep’s throat, for which the sheep thanks the shepherd as liberator, while the wolf denounces him for the same act as the destroyer of liberty, especially as the sheep was a black one. Plainly the sheep and the wolf are not agreed upon a definition of the word liberty; and precisely the same difference prevails to-day among us human creatures, even in the North, and all professing to love liberty. Hence we behold the processes by which thousands are daily passing from under the yoke of bondage, hailed by some as the advance of liberty, and bewailed by others as the destruction of all liberty. Recently, as it seems, the people of Maryland have been doing something to define liberty; and thanks to them that, in what they have done, the wolf’s dictionary, has been repudiated.



To watch a video of Walt Disney’s “Great Moments with Mr. Lincoln,” visit:  
<http://appendic.es/m/1r>

The full speech performed at the show was free of any reference to slavery and the American racial order. Instead, the Fair’s Lincoln cautioned his 1964 audience of the dangers of enemies within, exhorted fierce reverence for the rule of law, and urged steadfastness in the face of “false accusations” and the “menaces of destruction.” Strung together just-so, Lincoln’s words were a salve to the troubled Cold War mind—a firm endorsement of staying the course, and a reassurance against the legitimacy of the tumult in the streets.

Confronted with this strange, transhistorical robot, I cannot help but compound one metaphor with another, and recall the image of the mechanical Turk that opens Walter Benjamin’s famous “Theses on the Philosophy of History.” Benjamin’s automaton is dressed like a Turkish chess player and controlled by a “wizened” master chess player, a dwarf hidden from view through an optical illusion. The game is rigged; the automaton is “to win each time” by selling his opponent the idea of progressive time: reason made perfect through human history, and a future triumphant, unburdened by the wreckage of past and present. This is, of course, the dream of Moses’s Fair, Disney’s Lincoln, and midcentury American liberalism. But it is also a myth. “[A] storm is blowing from Paradise,” Benjamin tells us later in Thesis IX—a storm which propels the “angel of history” headlong “into a future to which his back is turned, while the pile of debris before him grows skyward. This storm is what we call progress.”

This is the poignant lesson urged by the stall-in protest that never was: what we call progress has been, in some not-so-distant corners of our polity—just outside the fairgrounds, as a matter of fact—a human disaster. The “pile of debris” left by CORE on the Triborough Bridge and on the steps of Borough Hall appears, no less than the stall-in, one small attempt to make visible that fact, to force a confrontation with it. As Benjamin suggests, we ignore it at our own peril.

Of course, none of this changes the fact that the Fair was enjoyed and indeed beloved by a re-

cord-making 50 million visitors over the course of its two seasons, throughout which Disney's Lincoln and GM's Futurama were crowd favorites. Lawrence Samuel is right to point out (as he does in his recent book *The End of Innocence*) that despite the harsh words of cultural critics about the Fair's rampant commercialism, despite its legacy as a financial failure, despite its outright denial of valid claims to racial justice—in the popular memory, the Fair lives on as “an experience that most visitors found thoroughly enjoyable if not enthralling, that sparked imaginations and reshaped people's vision of the world.”

My point is not that people were wrong to think so, or that they should have seen through the corporate heroics or the sanitized Lincoln (though I certainly think that *we* should). At its core, the World's Fair was entertainment, and entertaining it was. But there is always a cost that comes along with creating and selling a pristine version of past, present, and future; there is a cost that comes with being seduced by it, believing we can simply buy a better future or trust in technological innovation to invent one for us, in spite of the evidence of the troubled present and the wreckage of the past. Despite President Johnson's (no doubt) earnest words at the opening ceremonies—forecasting for the future America an “[unwillingness] to accept public deprivation in the midst of private satisfaction”—the Fair itself seemed to speak more loudly of our willingness, our eagerness, to do just that.

It is as Frank O'Hara claimed: we pay, sometimes dearly, for our entertainment.



## Notes

1. The stall-in, largely forgotten today, represents a key moment in the history of the civil rights movement, in which key debates over strategy and tactics, violence and nonviolence, legal and extralegal forms of action, integration and equality, and the role of “white liberals” and “white backlash” in the black freedom struggle all coalesce. The best and most thorough treatment of this incident is in Brian Purnell's wonderful book *Fighting Jim Crow in the County of Kings: The Congress of Racial Equality*

On the 50th anniversary of the Fair opening in 1964, the *New York Times* ran a number of articles which together emphasize this point. As Liz Robbins writes in one such article, “The fair may have offered a sanitized view of the world. But its true legacy was that it evoked real emotion on a personal scale. These are the seemingly fleeting moments—a lingering gaze, a shout at a demonstration, a flirting wink, a blink of imagination and a flick of a pen—that endure today.” Notwithstanding the reference to demonstrations, however, the narrative of Robbins' article remains remarkably faithful to the standard story the pits the “responsible” picketers of National CORE against the “irresponsible” and unruly extremists of Brooklyn CORE. In this story, the stall-in is but an unfortunate blip—repudiated in its own time, a bad memory (if it merits remembering at all).

in Brooklyn, based on his dissertation research on Brooklyn CORE. The protest is also discussed in brief in the other sources cited here.

2. Less discussed was the fact that the proposed civil rights act would be of little or no help for New York City ghetto-dwellers, and would have no bearing on their demands with regard to housing and police brutality. Though the 1964 Civil Rights Act did ultimately include provisions for

fighting segregation in education and discrimination in employment (neither of which would prove terribly effective in the short or long run), Brooklyn CORE and their supporters were all too aware that New York already had anti-discrimination laws on the books, which had not helped integrate the construction industry. Nor had an absence of school segregation laws done anything to improve the quality of education across black neighborhoods in New York.

3. The sanitation department, however, backed the stall-in and refused their towing services to the city.

4. Ironically, James Farmer had no trouble accepting the Triborough Bridge action as legitimate. See James Farmer, *Freedom, When?* (New York: Random House, 1965), 37-38. Background on “Operation Clean Sweep”—the Brooklyn CORE project which deposited trash from Bed-Stuy on the steps of Borough Hall in an effort to get acceptable trash pick-up service for the neighborhood—can be found in the archives at BHS and at BYPL, in addition to Purnell’s book.

5. As Robert Caro writes in his biography of Moses, *The Power Broker*, “To build his highways, Moses threw out of their homes 250,000 persons—more people than lived in Albany, or Chattanooga, or in Spokane, Tacoma, Duluth, Akron, Baton Rouge, Mobile, Nashville, or Sacramento. He tore out the hearts of a score of neighborhoods.” Though it remains the definitive biography, the image of Moses that Caro constructs is now being re-evaluated—and found one-sided and wanting—by some historians, most recently in Ballon & Jackson’s edited volume.

6. As Tirella discusses in his book, Moses was so committed to having Disney’s Lincoln appear at the Fair that he (rather, the World’s Fair Corporation) secretly provided the State of Illinois a quarter million dollar subsidy for their pavilion—provided that Lincoln would be in it.

## Recommended Reading

Bletter, Rosemary Haag et al. *Remembering the Future: The New York World’s Fair from 1939-1964*. New York: Rizzoli, 1989.

Wilder, Craig. *A Covenant with Color: Race and Social Power in Brooklyn*. New York: Columbia University Press, 2000.

Samuel, Lawrence. *The End of Innocence: The 1964-1965 New York World’s Fair*. Syracuse, NY: Syracuse University Press, 2010.

Purnell, Brian. *Fighting Jim Crow in the County of Kings: The Congress of Racial Equality in Brooklyn*. Lexington, KY: University of Kentucky Press, 2013.

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## Futures on Demand

by Matthew Goldmark

In “Far Beyond the Stars,” an episode from the television series *Star Trek: Deep Space Nine* (DS9), the commander of a futuristic space station hallucinates that he is a science fiction writer in 1950s New York. Far away from his twenty-fourth century life, Commander Benjamin Sisko (Avery Brooks) becomes Benny Russell, a black writer struggling against the prejudice of his managing editor, the condescension of friends, and the racism of local police.

The contrast between the twenty-fourth and the twentieth centuries is striking. While Sisko's word is law on the DS9 bridge, Russell suffers petty humiliations in the magazine's cramped offices. For instance, when fans request headshots of their favorite authors, editors plan a photo-shoot that excludes Russell and his colleague Kay Eaton, "played" in this hallucination by Kira Nerys (Nana Visitor) an extraterrestrial officer on DS9. Against Russell's protest, editors argue that fans are not ready to know that women and black authors write their science fiction favorites: "As far as our readers are concerned, Benny Russell is as white as they are. Let's just keep it that way." This official lack of diversity on the magazine's staff extends to the storyboard as well. When Russell proposes a piece featuring a black captain on a space station (that is, the premise of DS9) his editor retorts: "People won't accept it. It's not believable." In the office and on the page, "Far Beyond the Stars" argues that the future remains constricted by the social exclusions of the present from which it springs.

Storylines like this ostensibly allow viewers to see how far they—and *Star Trek*—have come. Yet the franchise's marketing and production histories complicate the inevitability of this storybook progress. *Star Trek: The Original Series* (TOS) famously gained prominence after its cancellation, and its reruns funded *The Next Generation* (TNG). Paramount Domestic Television only offered its syndicated cash cow TOS to stations that bought TNG—a financial strategy that collapsed the distance between an original and its next generation since both programs aired together. Therefore, while TNG and later *Star Trek* installments may present linear progress, this financial arrangement explodes any such timeline. Stations counted on viewers tuning in to TOS and hopefully staying on board for subsequent *Star Trek* voyages. While later series question the racial and gendered exclusions of TOS, this past continued to shape the franchise's future possibility.

A financial engine powers *Star Trek*'s narrative of social progress. "Far Beyond the Stars" implies that social harmony comes to science fiction with social advance in the real world. However, while its historical vignette shows how financial strategy produced exclusions in the past, it implicitly

tells viewers that inclusion follows a similar economic logic. Benny Russell's unbelievable space station becomes DS9 reality once the fantasy becomes commercially viable. Though "Far Beyond the Stars" anchors future possibility to a multicultural present, social advance remains intertwined with marketing potential.

The juxtaposition of TOS and later *Star Trek* franchise installments both reveals progress internal to the franchise and continuities that refuse to leave the past behind. For instance, TOS opened each episode with Captain James T. Kirk's (William Shatner) masculine mission: "to explore strange new worlds, to seek out new life and civilizations, to boldly go where no man has gone before." While this statement promised that *Star Trek* would bring viewers to peoples and places hitherto unknown, its purportedly universal "man" evinced the gendered exclusions of a utopian journey. Fittingly, TNG revised TOS's mission in the late 1980s by informing viewers that they would "boldly go where no one has gone before." This shift to the gender neutral corrected past omissions to make *Star Trek*'s travels more inviting to female voyagers.

This updated statement, however, does not include everyone. The persistent use of the phrase "new worlds" evokes a long history of inequality forged between "discoverers" and "discovered." Though Kirk and Picard promise "to go where no man/one has gone before," they expect to find "others" already there. Though *Star Trek* imagines social progress through the allegorical veil of extraterrestrial cooperation, its mission statement and naval metaphors reveal how the franchise maintains a Eurocentric vision of progress and discovery that excludes the rest from the West. By reconsidering *Star Trek*'s linear progress—a viewing practice facilitated by video on demand services such as Netflix, but prompted by the production history of *Star Trek* itself—we can see how *Star Trek*'s future remains mired in the past.



To watch the revised opening monologue of *Star Trek: the Next Generation*, visit:  
<http://appendic.es/m/1u>



## Imperialisms Past

*Star Trek* follows the intergalactic journeys of Starfleet, the scientific and military arm of the United Federation of Planets. At different points during the franchise, Starfleet confronts a rotating cast of alien antagonists including Klingons, Romulans, Cardassians, and the Borg. Scholars have read these various conflicts as permutations of the U.S.'s geopolitical conflicts gone interstellar. For example, Mark P. Lagon has suggested that TOS's frequent interference with other civilizations reflected Cold War anxieties. DS9, in contrast, engaged pressing questions from the 1990s: the political futures of "liberated" peoples, new alliances with old enemies, the entrenched legacies of settler colonialism, and the economic challenges of collective markets.

However, to read *Star Trek*'s future as a simple reflection of the period in which each show was produced ignores how the franchise evokes longer histories of exploration and imperialism. The technological-organic Borg provide a case in point. By "assimilating" their opponents into their mechanical hive mind, the Borg eliminate their enemies' individualism, liberty, and free will. Their violent practice of homogenization evokes a communist menace as imagined by the U.S. However, as technological hybrids, the Borg also evoke a dystopian future for Western capitalism wherein scientific advances bring dehumanization.

The Borg do not, however, only evoke the future. Scholars have linked the Borg's famous hail, "resistance is futile," to the Spanish *requerimiento*, a sixteenth-century text read to indigenous groups upon "first contact" with Spanish priests, soldiers, and explorers. Though this document ostensibly provided indigenous peoples with options—accept Catholicism or face the consequences—neither offered an alternative to Spanish dominance. Northern European powers encouraged this representation of a violent Spain—the so-called "Black Legend"—to place their own imperial projects in a better light. By reproducing this good cop/bad cop contrast in its speculative future, *Star Trek* takes a lesson from these historical antagonisms to idealize its own intergalactic police mission. For instance, while Starfleet purports to study other cultures and learn from them, the Borg "as-



"The Black Legend" as depicted by engraver Theodor de Bry in 1598.

similate" groups that they deem worthy—those with biological advantages and relevant technology. Starfleet officially denies its militaristic might and cultural egocentrism through its comparison to the Borg, despite the fact that Starfleet employs violence and interferes with other groups throughout the franchise's run.

Later installments from the *Star Trek* franchise question this official distance between Starfleet's "pure" mission and the Borg's indiscriminate aggression. In both *TNG* and *Voyager*, the Borg reflect Starfleet's self-righteous party line back to its protagonists. For instance, when *Voyager*'s captain Katherine Janeway (Kathryn Mulgrew) endeavors to recover Seven of Nine (Jeri Ryan), a Borg of human origin, Seven of Nine retorts: "You have imprisoned us in the name of humanity yet you will not grant us your most cherished human right. To choose our own fate. You are hypocritical, manipulative ... you are no different than the Borg." Seven of Nine challenges Janeway's (and Starfleet's) attempts to separate their scientific studies from Borg domination. According to Seven of Nine, both groups impose their ideas of life on others. Such comments allow the franchise to critique its own future's past. Against the self-righteous ideals of the franchise's earlier installments, these later episodes challenge the purity of Starfleet's mission. However, in so doing, these auto-critiques often undergird Starfleet's power all the more. Rather than dismantling Janeway's author-



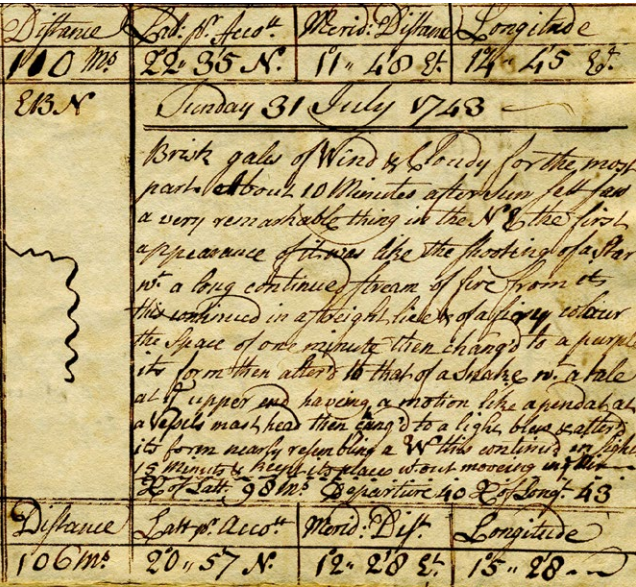
ity, Seven of Nine ultimately joins the crew while preserving minimal signs of difference. (The show never completely removes Seven of Nine’s mechanical Borg implants, though they selectively choose implants that don’t obstruct access to a form-fitting uniform). By incorporating alien cultures and listening to dissident voices, Star Trek suggests that it will always improve—progress—in linear fashion.



Captain’s Log

Star Trek’s official faith in the Starfleet mission is mirrored in the franchise’s opening narrative form, which borrows a convention from European “exploration”: the captain’s log. In the captain’s log, the show’s principal actor/highest-in-command introduces an episode’s primary theme or conflict through a voiceover. For instance, the first episode of TOS begins:

Captain’s log, stardate 1312.4. The impossible has happened. From directly ahead, we’re picking up a recorded distress signal, the call letters of a vessel which has been missing for over two centuries. Did another Earth ship once probe out of the galaxy as we intend to do? What happened to it out there? Is this some warning they’ve left behind?



Captain’s log of Samuel Capron, Sunday, July 31, 1743.  
G.W Blunt White Library at Mystic Seaport

While this first log entry explicitly deals with time (a vessel has been missing for two centuries) and the newness of the Enterprise’s mission (has another ship been here before?), it encapsulates these rhetorical questions of the future within a common naval form. The captain’s log makes the novelty of intergalactic exploration a future echo of past travel narratives.

As important, these captain’s logs align viewers with Starfleet, insinuating that what viewers “see” is not an impartial account. Instead, viewers voyage with Kirk, Picard, and Janeway, who set the stage for them. They are privy to official information recorded in captains’ logs, later destined for the Federation’s review. Though this narrative form provides a window into the workings of Starfleet and the minds of its captains, viewers are not asked to reconsider or disagree with these official interpretations. For instance, in preparation for an impending conflict with the Borg, Janeway reviews a series of captains’ logs in search of inspiration. Quoting Picard, she reads aloud: “The Borg are utterly without mercy; driven by one will alone: the will to conquer. They are beyond redemption, beyond reason.” Janeway’s citation does more than recite an official Starfleet position regarding the Borg. It provides a baseline assessment for viewers to “encounter” this alien antagonist. Though viewers’ opinion of the Borg may change, it will grow with that of Starfleet. Viewers are told to fear what Starfleet fears and to see from Starfleet’s vantage. The captain’s log demonstrates how Star Trek constructs its Other through Eurocentric channels—despite the intergalactic makeup of Star Trek crews.

A second technology shows how Star Trek inherits a Eurocentric history of discovery, order, and progress. The same episode discussed above opens with Janeway in the holodeck—a holographic playroom aboard Starfleet vessels that allows staff to recreate their home worlds (“Encounter at Farpoint,” TNG, season 1, episode 1), to unwind in imaginary jazz bars (“11001001,” TNG, season 1, episode 15), and to write their own 3-D novels (“Author, Author,” Voyager, season 7, episode 20). In this episode, however, viewers meet Janeway in a simulation of Leonardo Da Vinci’s workshop. Janeway negotiates with the inventor for corner

space in his study since, as she argues, “just being here in your presence is inspiring to me.”

By turning to Da Vinci for inspiration, *Voyager* makes its intergalactic mission the progeny of European “innovation.” In such moments, rather than break with the past, *Star Trek* preserves a Eurocentric view of scientific advance that marginalizes its Others (even as it purports to “incorporate them” into its intergalactic crew).

However, to take the captain and his/her log as an all-powerful determinant of *Star Trek*’s content ignores the re-evaluations and revisions of authority that undercut this Eurocentric line. Throughout its multi-series run, *Star Trek* reconsiders its own representations of gender, race, and extraterrestrial otherness. In the DS9 episode “Trials and Tribble-ations,” Sisko and his crew travel back in time to TOS to prevent a bombing by the Klingons. To blend in, these travelers change their uniforms to match the color codes of TOS. Sisko glosses, “In the old days, operations officers wore red, command officers wore gold...” At this point, Lieutenant Commander Jadzia Dax (Terry Farrell) appears in a miniskirt, interrupting, “And women wore less.”

Dax smiles and twirls, presenting time travel as an amusing and exciting fan fiction. In fact, throughout the episode, Dax voices the fan’s desires: to meet Kirk, to go on the Bridge, and to run around this science fiction playground. However, Dax’s twirl and comment also present another possible interpretation of this *Star Trek* future past: a tongue-in-cheek reflection on its sexist uniforms and the diminished presence of women in roles of authority. Dax’s comment reveals the lack of progressive futures in *Star Trek*. By traveling backwards, the cast of DS9 inhabits a 1960s future that seems outdated by the 1990s.

Throughout this euphoric trip, characters repeatedly stumble over the inequalities of gender and race that marked *Star Trek*’s utopian future’s past. When one of his crew calls Sisko “Captain,” Sisko responds, “Lieutenant, actually. I didn’t want to push my luck.” Sisko provides no other explanation for this hierarchy change. Perhaps he strategically diminishes his own authority to prevent infelicitous questions or scrutiny by other



Janeway and Da Vinci discuss the nature of invention.  
Paramount Pictures



Dax “wears less.”  
Paramount Pictures

Starfleet officers. However, on the heels of Dax’s remark, another possibility comes into view. As a black Starfleet captain—an impossibility in TOS’s “time”—Sisko would trouble the utopian terms of *Star Trek*’s future past.

Race appears most explicitly, however, in conflicts centering around Worf (Michael Dorn), a Klingon member of Starfleet. The Klingons famously changed appearance and personality over the course of *Star Trek*’s run. In TOS, they were presented as an alien stereotype of the Orientalized “Yellow Peril.” However, beginning with *Star Trek: The Motion Picture* (1979), the franchise reconceived the Klingons. In that film, Klingons appeared with an amalgamation of militaristic values, feudal habits, and “tribal” aesthetics. This difference

is so striking that the DS9 crew cannot identify TOS Klingons and ask Worf incredulously: “Those are Klingons?” In showing how Klingons become unrecognizable in the course of *Star Trek*, DS9 remarks on the contingency of race as opposed to its transhistorical truth.

This does not mean that *Star Trek* eventually gets it right. To the contrary, it’s fairly simple to play the “who are they really supposed to be” game with *Star Trek*’s treatment of (intergalactic) race. While individual characters from non-terrestrial places may be fleshed out and given a range of emotional responses, the group as a whole is often restricted to a series of tropes. By making the Ferengis a race of intergalactic traders with oversized appendages and an addiction to “gold-plated latinum,” *Star Trek* merely updates Jewish stereotypes. Though Worf might complicate the general depiction of Klingons as “tribal” and bellicose by nature, his planetary brethren remain reduced to aggressive types.

An early episode of *Voyager* that focuses on B’Elanna Torres, a Human-Klingon “hybrid” (*Star Trek*’s official term for persons of interplanetary descent), shows how Klingon-as-racial-type remains subordinated to the more expansive possibilities of unmarked human. In *Faces*, an alien (Vidiiian) splits Torres into two bodies, one Klingon and the other human, because her Klingon genome remains immune to a disease that is ravaging his people. In determining what traits belong to which body, it becomes painfully clear that the human B’Elanna is a fully fleshed-out character with whom the viewer is expected to align and sympathize. B’Elanna the human remains in an official Starfleet uniform while other aspects of her identity that would not seem biological become reified in the split. While the human B’Elanna continues to speak as the main character did, the Klingon B’Elanna speaks with a stereotypical Klingon accent. While the human experiences a range of emotion, the Klingon remains voraciously sexual, aggressive, and—like her genome—resistant. Rather than conceive of this “new” Klingon as an improvement on the racist imagination from the TOS past, *Voyager* shows how future changes reconfigure but do not ameliorate racist types.

## “Time is Not Linear”

*Star Trek* does not leave the past behind, a point made in the very first episode of DS9. In its pilot, Sisko struggles with a disembodied alien population known as “The Prophets” that does not experience time in a linear fashion. Throughout the episode, these aliens return Sisko to a traumatic scene from his past: the death of his wife. After circling back to this moment, the alien consciousness asks Sisko why “you bring us here.” Sisko argues that he does not do the “bringing,” that the alien forces him to dwell in this particular moment. However, he finally acquiesces, “I never left this ship. I exist here. I don’t know if you can understand. I see her like this every time I close my eyes. In the darkness, in the blink of an eye, I see her like this.” As Sisko breaks down, he agrees with the alien consciousness, “No. [Time] is not linear.” *Star Trek*’s official narrative of progress that moves in linear fashion—expressed most clearly in the captain’s log—cannot address or repair the enduring experience of things like loss, discrimination, and suffering.

*Star Trek*’s future remains unfinished. With J.J. Abram’s two films, the franchise continues to look to its own past to rethink its future. But each new installment does not merely add more to the plot. Rather, it adds another set of hopes and failures to an already messy utopia.

With the rise of video on demand (VOD) services, viewers seem in control of their televisual destinies. They can abandon story arcs, travel back to greatest hits, and compare original versions to reboots. However, for a media franchise like *Star Trek* that spans over fifty years, VOD shows how fleeting our control may be. *Star Trek* illustrates not how far we’ve come, but rather how conflicts persist under allegorical veils and extraterrestrial make-up. While *Star Trek* smoothes over inequality with its intergalactic cast, the program routinely calls attention to the limits of future utopia. Thinking about the future always revises futures past, but that doesn’t mean that we leave them behind.







## Dancers and Diplomats: New York City Ballet in Moscow, October 1962

by Rachel Marcy

I am indebted to the generosity of everyone who shared their experiences of the 1962 tour. My thanks to Jacques d'Amboise, Marlene Mesavage DeSavino, Paul DeSavino, Allegra Kent, Robert Maiorano, Teena McConnell, Arthur Mitchell, Nina Morozova, Frank Ohman, Suki Schorer, Bettijane Sills, Victoria Simon, Lyudmila Slutskaia, Carol Sumner, Violette Verdy, and Edward Villella. Unless otherwise marked, quotations in this piece are from my interviews with them. Thanks also to Erin Hestvik of the New York City Ballet Archives; to the Jerome Robbins Dance Division at the New York Public Library for the Performing Arts; to Svetlana Khaitova and Slava Khaitov for their help with interpretation; and to John Marcy, Nathan Marcy and Eric Nichols for their notes and assistance with the historical photographs.

Robert Maiorano watched from the wings as dancers assembled onstage. On one side of the curtain were seventeen women. On the other side were 6,000 Muscovites filling the seats of the Palace of Congresses, the Kremlin's new modern theatre. In between the dancers and the audience was the orchestra, which was playing the American and Soviet anthems in turn.

Weeks on tour had left the dancers exhausted. They had departed New York on August 29th—Maiorano remembered the date because it was his sixteenth birthday—and performed in several European cities before arriving in Moscow in early October, 1962.

This night felt particularly tense. “There were riots outside the theatre because the black market had sold extra tickets,” Maiorano remembered. “Plus the fact, of course, that this is the day that Kennedy told Khrushchev to get out of Cuba or else.”



Throughout the 1950s, the United States and the Soviet Union dispatched dancers and musicians across the globe in a kind of cultural proxy war designed to affirm the virtues of liberal democracy and communism. As art forms that don't rely on shared language to convey meaning, music and dance were particularly suited to cultural exchange. Modern dance companies led by the choreographers Alvin Ailey, Martha Graham, and



Members of the Bolshoi Ballet arrive in Amsterdam, 1960.  
Wikimedia Commons

José Limón conducted successful tours of Asia and South America; New York City Ballet (NYCB), San Francisco Ballet, and other ballet companies followed.

Soviet officials considered Russian achievements in ballet to be unsurpassable. In a widely published 1955 editorial, journalist George Sokolsky disagreed. “The United States need not hang its head in shame in this field,” he wrote. “This is sound propaganda and ought to be encouraged.” Someone at NYCB apparently concurred, because several copies of the editorial were carefully cut and pasted into the company's scrapbook.

In 1959, the Soviet Union sent the famed Bolshoi Ballet on a tour of the United States. A total of 900,000 requests poured in for 165,000 tickets, and they were reportedly traded for up to \$150 (\$1200 in today's currency). The Bolshoi's reviews in American papers verged on the ecstatic, but the observation that some of their choreography was old-fashioned—for Western tastes—resulted in accusations in the Soviet press that the U.S. government wasn't fully committed to cultural exchange. Someone, they argued, was trying to undermine the Bolshoi's successful presentation of Soviet culture.

In response to the Bolshoi's tour, the State Department sent American Ballet Theatre to the Soviet Union in 1960. It was a decision that dance critic John Martin predicted would result in “profound national humiliation” for the United States. He derisively called American Ballet Theatre the “Gopher Prairie Civic Ballet” and concluded that the panel giving advice to the State Department should do its patriotic duty and rescind their recommendation. Contrary to Martin's dire predictions, American Ballet Theatre was well-received. Premier Nikita Khrushchev made a surprise appearance at their closing night in Moscow, after which he hosted an impromptu cast party.

The State Department wanted another ballet company to tour the Soviet Union, and New York City Ballet was ready to go. The company was co-founded by arts patron Lincoln Kirstein and choreographer George Balanchine, who was born Georgi Balanchivadze to a Russian mother and Georgian father living in St. Petersburg. Balanchine hadn't

always been keen to bring the company to the Soviet Union, and had previously flatly declined. Returning to his drastically altered home country was a difficult prospect, but he was eventually persuaded that taking his company to the U.S.S.R. was virtually a patriotic responsibility.

Company manager Betty Cage announced NYCB's willingness to travel to any Iron Curtain countries of interest to the State Department, as long as they could also incorporate stops in Western Europe. The State Department wanted the company to spend more time in the Eastern bloc, and Cage replied that an extended tour of "hardship posts" would be too tiring for the dancers. NYCB was also concerned that the Soviets might detain Balanchine, and Cage asked that he be provided with diplomatic immunity. Company administration grew increasingly frustrated as the State Department's negotiations with their Soviet counterparts dragged on, and in April 1962 Lincoln Kirstein sent a terse telegram to the Department's Cultural Affairs Office: "Due to pressure of practical existence, we must now schedule fall and winter season in the U.S." The hard bargaining evidently worked, because three weeks later the company and State Department were debating travel details.

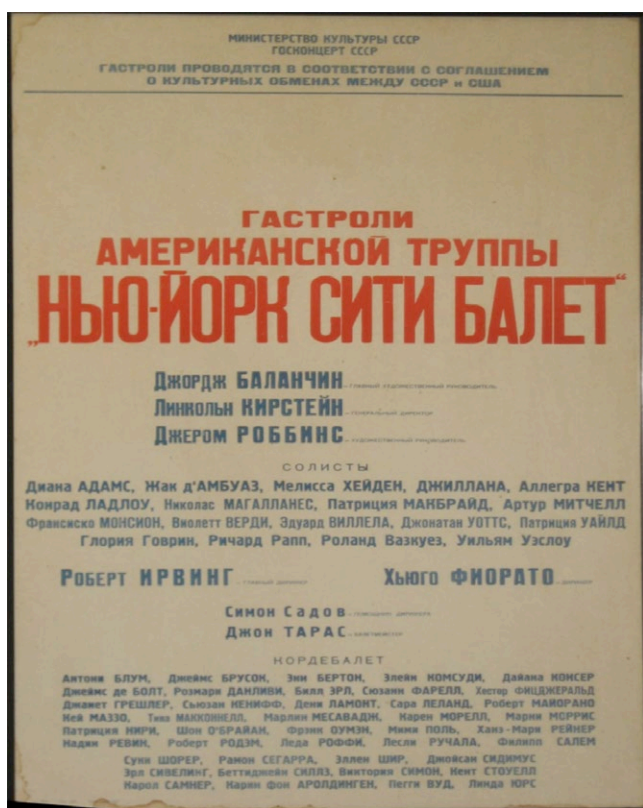
The company would begin its travels in Western Europe, then continue on to Moscow, Leningrad, Kiev, Tbilisi, and Baku, Azerbaijan. All personnel were subject to final approval by the State Department, and "improper conduct" would result in dismissal from the tour. Per the carefully calibrated principles of Cold War reciprocity, NYCB would trade places with the Bolshoi, which would embark on a tour of the U.S. and Canada. "All disputes arising from the present contract," the agreement noted, "shall be resolved by means of friendly negotiations."

Betty Cage initiated a flurry of communications with Goskontsert, the Soviet cultural exchange agency. When American Ballet Theatre toured the U.S.S.R. in 1960, they were denied access to Russia's two greatest theatres, the Bolshoi in Moscow and the Mariinsky in Leningrad, which had been renamed "Kirov" in honor of an assassinated Party official. Goskontsert tried to schedule a lesser venue for the Leningrad opening; Cage made it



Members of the American Ballet Theatre take a curtain call after a performance in Moscow, 1960.

Library of Congress



Tour poster featuring the dancers' names.

Courtesy of Carol Sumner

There may have been some irony in the best of American culture being represented to the Soviet Union by someone of Russian extraction, but Balanchine was a proudly naturalized citizen, and he built his career in the United States. The shared ballet heritage between Russia and the U.S., created by emigrés like Balanchine and the staff at his School of American Ballet, also made New York City Ballet an ideal candidate for the exchange program.



perfectly clear to Goskontsert that anything other than the Mariinsky/Kirov was unacceptable. Cage requested the technical specifications of the theatres in each city so they could plan their repertoire; the Goskontsert official, apparently affronted by this request, told her she didn't need them because all their stages were suitable for ballet. "We have also taken counsel with our specialists who are well acquainted with your ballets and they completely share this point of view," he wrote.

New York City Ballet brought 61 dancers, ranging from 16-year-olds fresh out of the School of American Ballet, to established principal dancers in their late 20s and 30s. They were accompanied by Balanchine, Kirstein, Betty Cage, and a company doctor; four conductors and pianists, who had the task of rehearsing the Soviet orchestra that would travel with them on tour; their stage manager and a small crew; four wardrobe personnel; and chaperones for the dancers under age 18. They would be met by interpreters provided by Goskontsert and attachés from the U.S. Embassy.

After five weeks in Europe, the company's plane touched down in Moscow on October 6th. "The runway was flooded with lights, and there were photographers and flowers, and it was just an amazing scene," remembered dancer Marlene Mesavage. Balanchine descended the airplane's stairs with ballerina Diana Adams, and they were ushered into the airport lobby to meet the press. A contingent of Bolshoi dancers who'd been left out of their company's tour met their American counterparts with bouquets in hand. Waiting with them was Balanchine's brother, Andrei Balanchivadze, who was a successful composer in Georgia. The brothers hadn't seen each other since they were children in St. Petersburg, over 40 years before. They were the last living members of their immediate family; their parents were dead, their sister killed in a German air raid on Leningrad.

Meanwhile, a quieter reunion was taking place on the tarmac. Wardrobe mistress Sophie Pourmel hadn't returned to her home country in seventeen years. She wrote to her siblings, unsure if she even had the correct address, and was overjoyed to receive a reply from her brother: "My heart is bursting. Come, come." Now in Moscow, walking down the airplane stairs, she heard people call-

ing her nickname, Sonja. Her siblings had somehow hitched a ride with the press corps. She was so overwhelmed she froze on the steps, and her brother walked up to help her down. They stayed together in the hotel lobby until two o'clock in the morning, talking about their parents' lives during the war.

The company was accommodated in the Hotel Ukraine. Dancer Bettijane Sills remembered a lobby the size of Grand Central Station, with elevators that could move cattle. One of the middle floors was inaccessible from the elevator, and the dancers surmised it to be the location of the hotel's listening equipment. They'd been warned by the State Department that their rooms would be bugged, and that they should be constantly careful with their words; the waiters at the breakfast table could be reporting back to the KGB. They were told that if they absolutely had to say something of a political nature, they should write it out and flush it down the toilet.

Their first impressions of Moscow were unflattering: imposing and claustrophobic, spooky, dour, and unrelentingly gray. However, they still felt warmly welcomed. "Wherever we went we had kindnesses from the people," remembered dancer Teena McConnell. Most of the people on the tour had never encountered conditions like those in the Soviet Union, and previous experience colored their interpretation of what they were seeing. Dancers remembered empty shelves in the stores; Sophie Pourmel was relieved the stores were open, because that meant there was food available. Conditions in the Soviet Union were better than when she had left. The dancers struggled with the food, which featured an abundance of bread and potatoes, and rather few vegetables. They were each allowed to bring a foot locker, which they could stuff to 106 pounds with non-perishables, toilet paper, and cleaning supplies. They brought Sternos and pooled together Spam and tuna to bolster their diet.

Principal dancer Violette Verdy felt that her life during the Nazi occupation of France prepared her for conditions in the Soviet Union. She observed the acute culture shock experienced by many of her colleagues. "Americans had no idea how awful countries are after wars and after repression, and

with certain types of regimes,” she said. “They had never seen it firsthand.”

Robert Maiorano also took the demands of touring in stride. “I grew up in a cold-water flat in Brooklyn, my mother wasn’t a great cook, and we had bedbugs in Brooklyn, you know? So this wasn’t shocking to me, this wasn’t appalling to me, this was still relatively first-class.”

But the most difficult part of the tour, it seems, was the unshakeable feeling of constantly being watched. Teena McConnell, who as a minor was accompanied by her mother, felt that the dancers were under silent observation. She believed it was mostly curiosity, but it could certainly appear suspicious. Hotel guests had to leave their room keys with a matron on each floor whenever they left their rooms, and one day McConnell turned in her key and went down to the lobby to be bused to the theatre. She realized she’d forgotten something and dashed back upstairs, bypassing the matron’s desk. She soon discovered she didn’t need her key, because hotel staff were in her room, rifling through her suitcases. She asked them what they were doing, and they immediately exited without explanation. The matrons knew everyone’s whereabouts; when company members congregated in one room, the room’s phone would ring, and they were told to pick up their keys and go to their own rooms. Company electrician Paul DeSavino said it was like being in kindergarten.

Arthur Mitchell recalled the strain and uncertainty of traveling in the Soviet Union. “We all had to be on our guard all of the time, because you didn’t know who was who, you didn’t know who was KGB. We didn’t know who was there as a spy.” As an African-American principal dancer, Mitchell had no chance of anonymity, and constant observation was exhausting, even if it was in admiration. He felt that the dancers were always on display.

Interactions with local people were closely proscribed, and it could be dangerous for Soviet citizens to approach foreigners. Marlene Mesavage remembered that people on the street in Moscow were often unwilling to make eye contact with the Americans, which they found disconcerting. The penalty for arousing the suspicion of the police

was demonstrated when a Russian man struck up a conversation with a group of dancers on the train. “As soon as we got to the next stop,” said principal dancer Edward Villella, “two burly guys just grabbed him, took him off the train, and we watched him get beaten.”

It was easy for the American visitors to be isolated, as very few spoke Russian and they had a rigorous schedule with regimented mealtimes. Their interpreters were always on hand, and functioned as both intermediaries and buffers between the dancers and the public. Some of the dancers did become friends with the Russian staff, and they were able to visit tourist sites. Still, they felt very constrained. Principal dancer Jacques d’Amboise remembered the attachés from the State Department reading the company’s mail. The dancers felt they were being scrutinized onstage and off.

Despite the enforced divide between performers and audience, the dancers were encouraged by the State Department and company administration to give small gifts to locals, although they had to be very discreet in doing so. Teena McConnell offered a piece of chewing gum to the hotel’s elderly elevator operator, and was flummoxed when the woman waved it away, shushing her with a finger to her lips. The next time she went in the elevator, the woman signaled that she could take the gum, which she slipped into her pocket with a conspiratorial “shh.” Despite the danger, people sometimes approached the company and asked for goods; dancer Frank Ohman said one man offered to buy the shoes off his feet. Jeans were particularly coveted items, as electrician Paul DeSavino discovered when he gave a pair of jeans to a young man, a student who followed the company around Moscow.

It was a small thing for him to give away a pair of thoroughly used, unwashed work jeans, but the student was overjoyed. In turn, Soviet ballet fans gave the dancers flowers.



The dancers were coming off five weeks in Western Europe, but they barely had time to catch their collective breath before they launched into stage rehearsals for their run in Moscow. The costumes,

sets, and lights had been shipped ahead and delivered to the Bolshoi Theatre via horse-drawn wagons. DeSavino recalled the hard-working stagehands of the Bolshoi, “sensational” middle-aged women who kept everything running smoothly despite the language barrier. The American stage crew came equipped with an English-Russian glossary of theatre terms, but communicated mainly through pointing. During the Moscow run, the company alternated between the historic Bolshoi and the massive Palace of Congresses in the Kremlin. The dancers were sharing space with the Bolshoi Opera—where the American singer Jerome Hines was guest starring in *Boris Godunov*—and were displaced from the Kremlin for the 150th anniversary celebrations of Napoleon’s disastrous invasion of Russia. This was particularly stressful for the stage crew, who had to shuttle the sets and lighting equipment between the two theatres.

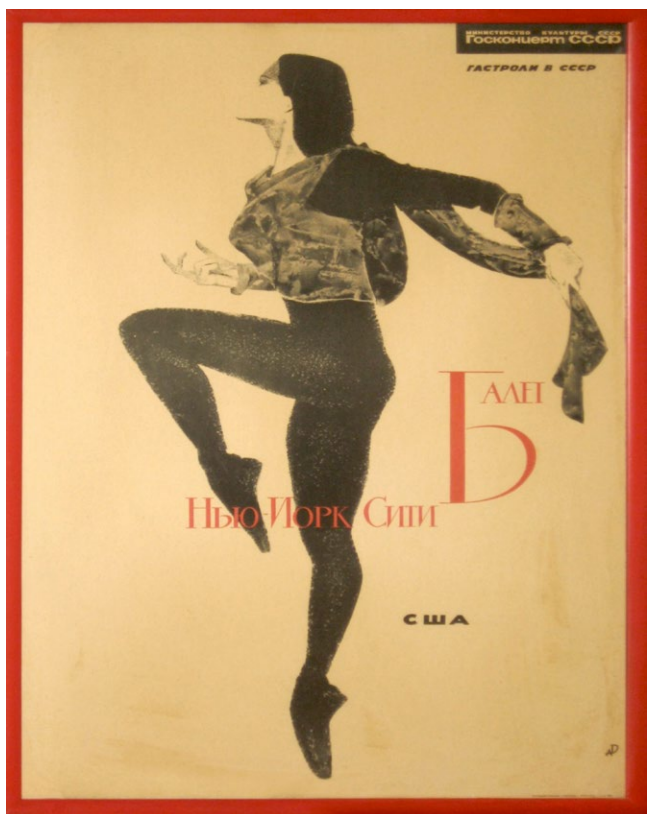
Young corps member Teena McConnell and principal dancer Allegra Kent used the same phrase

to describe their experience of performing on the tour: tremendous pressure. “We were determined to be the best we possibly could be, because we were representing America, but also Mr. Balanchine and New York City Ballet,” explained Arthur Mitchell. Given ballet’s long history in Russia, the dancers were excited and anxious about performing before such knowledgeable audiences.

Marlene Mesavage vividly remembered opening night. “The entire company was gathered onstage, and the curtain rose, and they played the Soviet anthem followed by the American. I have to say that I really felt the significance of the occasion. Tears welled in my eyes when I heard ours, and I just felt such tremendous pride and attachment to my country. I felt that art was transcending our political differences. It was extraordinary.”

Opening night in every city on the tour was attended by Party officials, and the response was generally tepid. Even if those in attendance genuinely appreciated the company’s work, they were reluctant to demonstrate overt enthusiasm for anything American. “I remember finishing my variation in *Agon* to thundering silence,” Edward Villella wryly commented.

The dancers were unsure what the audience would like, as Balanchine’s choreography was very different from the 19th century classics and the 20th century staples of Soviet ballet repertoire. Soviet choreography was story-driven and incorporated mime; New York City Ballet brought abstract, pure-dance pieces or works with minimally sketched plots. Lyudmila Slutskaya saw the company perform at the Kremlin. She was twenty-two, around the same age as many of the dancers. It was a one in millions chance that she got a ticket; she was dating a young man whose mother worked in the government, and who had procured two tickets for the ballet. She had participated in children’s dance classes and seen children’s theatre shows, but she’d never seen the Bolshoi. What Slutskaya saw astounded her. New York City Ballet felt like the rock and roll music being smuggled into the U.S.S.R., and to see it performed onstage, with official sanction from the government, was startling. She wasn’t able to discuss it with anyone, because her family and friends weren’t able



Tour poster featuring principal dancer Melissa Hayden.  
Courtesy of Carol Sumner



to attend—and because people were scared to talk about anything Western.

One of the most avant-garde pieces performed was *Agon* (“contest” in Greek), the product of the close collaboration between Balanchine and Igor Stravinsky, who composed a work based on 17th-century French court dances. The ballet is performed by twelve dancers wearing plain black and white costumes, in a minimalist setting. It is both courtly and nervy, employing traditional forms to create a disquieting atmosphere evocative of modernism and the Cold War. The dancers intertwine their bodies in otherworldly yet frankly sensual positions not found in the academic ballet vocabulary.

Balanchine also took the bold step of casting a black man and a white woman—Arthur Mitchell and Diana Adams—in the central pas de deux of the ballet. Mitchell was emphatic about the social significance of the casting of the ballet, which was choreographed in 1957. “That was an amazing, amazing thing for him to do. That was defying what society was all against,” he said.

Audiences loved *Agon*. “Every second night from that time on, the audiences were just unbelievable,” said Edward Villella. “We got the politics on the first night, and we got humanity from the second night on.”

Soviet critics were less impressed with *Agon*, and complained that Balanchine’s work was cold and somewhat inhuman. One wrote that the ballet “is nearer to mathematics than to art... this work is being addressed to our brain, says nothing to our heart.” Another charitably wrote that Stravinsky was an outstanding composer, but *Agon* “could hardly be one of his best works.” Anna Ilupina of *The Moscow News* flatly called the ballet a “morbid tragedy.”

Critics were initially hesitant to praise the company, partly due to the dangers of showing real enthusiasm, and partly due to artistic differences. Anna Ilupina acknowledged the company’s success with the audience while denying that anything they offered was truly intriguing. “The troupe led by Balanchine has apparently awaked a great deal of interest, despite their having brought nothing

that could be termed basically new,” she wrote. She even employed the unusual tactic of praising the audience for their “customary hospitality,” interpreting the applause as praise for the dancers “who displayed real heroism in overcoming the intricate steps, and who obviously defied the cold abstract quality” of the work. In other words, the dancers succeeded in spite of the music and choreography, not because of it, and the audience was applauding out of sympathy. Balanchine, Ilupina believed, was at his best when he hewed closest to the traditions of his Russian predecessors. She praised dancer Suki Schorer by comparing her to “our Katya Maksimova who is being so greatly admired now by the Americans.” A favorable comparison to a Russian dancer was a safe way to issue compliments, while reminding readers that the Bolshoi was equally formidable.

After observing the NYCB dancers in their daily ballet class, Natalia Roslavleva praised the visitors’ musicality and work ethic. “Their discipline, resilience, readiness for hard work and stamina are really astounding,” she wrote. Audiences were particularly enraptured with the Americans’ speedy footwork. Carol Sumner was stunned to get three bows for her solo in *Raymonda Variations*. “I don’t think they ever saw anybody move that fast,” she remembered. Roslavleva interpreted the American style of dance as reflective of national traits: “athleticism, endurance, a sense of humor and the rationalism of the American nation.”



“Rocky Staples, cultural attaché, informed us that the embassy takes no responsibility for dancers,” Lincoln Kirstein recalled of the onset of the Cuban Missile Crisis during the tour:

In case of our internment, he has no authority to intervene. In the Kremlin at the Palace of Soviets, brilliant performance of *Agon*, with the crowd cheering Arthur Mitchell (“Meech-elle, Meech-elle”). On the way to the hotel, rumbling tanks in back streets. The kitchen made a special effort to prepare a feast; the maids frighteningly sympathetic. Betty Cage and I in cold sweats. Balanchine cheerful: I’ve never been to Siberia.



Arthur Mitchell in Harlem, 1955,  
as photographed by Carl Van Vechten.  
Library of Congress



The former United States Embassy to the USSR as it looks today.  
Wikimedia Commons

In Washington, revelations of missiles in Cuba sent the Kennedy administration into a diplomatic and military scramble. In Moscow, Edward Villella finished his solo in *Donizetti Variations* to prolonged rhythmic applause. When the audience refused to stop clapping after 20 curtain calls, he walked to the front of the stage, nodded to the conductor, and did the whole thing over again. “The interpreters were telling me that you could count the number of encores in the history of the Bolshoi on one hand,” he remembered.

Both the State Department and the dancers were determined to carry on with the performances, even if they were nervous about the crisis. The rigorous performing schedule and the unfamiliar food were taking their toll, and presented more immediate concerns than the Soviet vessels moving toward Cuba. Dancers were suffering stress injuries and a condition they named “Moscow tummy,” causing the healthier among them to take on extra parts. “I was dancing four ballets a night, hard ones,” said Carol Sumner. “Everything else to me was all irrelevant.” Victoria Simon remembered being thrown on for *Scotch Symphony*, a ballet she’d never even understudied. She was taught the ballet’s first movement in the half-hour before curtain, and then was taught the third movement in the wings during the second movement. “I kept saying, ‘Just pull me and push me in the right direction!’”

Allegra Kent was also taking on extra roles, while coping with anxiety over being separated from her young daughter. “I thought, Oh my God, my daughter is in New York City and I’m in Moscow,” she recalled. “It’s just horrible.” Kent danced multiple leading roles in almost every performance, including the pas de deux in *Agon* opposite Arthur Mitchell. “My routine was to have breakfast, go to the theatre, rehearsals, get ready, performance, dinner after the performance, come home, go to sleep,” she remembered.

Most of the dancers remembered receiving bulletins from the U.S. Embassy about developing events. Some dancers thought they

were given incomplete information because the State Department didn't want them to panic. Others thought they were given accurate information for the same reason: the Embassy didn't want speculation to take the place of facts. Some of the dancers even remembered reading a transcript of Adlai Stevenson's speech at the UN, and Kennedy's address. Others felt adrift, only learning the extent of the crisis when they returned home. Many of the dancers assumed that if the situation became truly dire, they would be sent back to the United States, and the Bolshoi would be returned to Moscow. There was a precedent for this expectation, as previous state-sponsored tours had been cut short due to political tensions. If they weren't being shipped back, war probably wasn't imminent.

Some dancers recalled being told to leave the Embassy—where they went to get hamburgers to supplement their hotel food—because there was going to be a planned demonstration. Young people tumbled out of buses, lobbing rocks and ink bottles at the Embassy's honey-colored stone walls.

Dancer Teena McConnell and her mother probably had the most frightening experience of the crisis: they were walking near their hotel when they encountered a mass of chanting people. Men in the crowd threw lit cigarettes and tried to burn her mother's coat, and they beat a hasty retreat to the hotel. In a report for the CIA, an attaché for the U.S. Air Force wrote that the Soviet government planned a large demonstration for October 27th, when they had troops installed on side streets around the Embassy to maintain control of the crowd of around 5,000 recruited youths. This was likely the demonstration Teena McConnell and her mother encountered, and although most of the demonstrators were minimally enthusiastic, some clearly took it as an opportunity for common malice.

At other points, the reaction to the crisis seemed surreally mundane. The Australian ambassador in Moscow extended invitations to company members, and Marlene Mesavage and Paul DeSavino went to dinner at his residence. As they were eating, people in the street started overturning cars and setting them on fire. The ambassador calmly

explained that it wasn't anything to worry about—just something to make a headline. They finished their dinner and walked back past smoldering cars.

The State Department staff could perhaps have done a better job communicating to the dancers that life in the Soviet Union was proceeding fairly normally, as the visitors had no barometer for interpreting displays of military power. "One morning we got up and we saw all these tanks and airplanes and soldiers, and we said, Oh my God, we're at war!" remembered Arthur Mitchell. The company gathered in the dining room and anxiously discussed their options for getting out of the U.S.S.R., until someone finally told them it was a rehearsal for a parade celebrating the October Revolution.

In truth, the Kennedy Administration did not inform Ambassador Foy Kohler of the crisis, and the Embassy remained in the dark for the first six days, until they received a copy of Kennedy's address to the nation. In his memoir, NYCB's attaché, Hans Tuch, wrote that he wasn't aware of the crisis until it was almost over, and wasn't aware of the extent of the situation until a letter arrived from his wife, advising him to move further east to escape the range of American missiles. The Embassy had been charged with shaping public perceptions of the United States, and NYCB's performances proved a fortuitous tool. In his report, the Air Force attaché wrote that "the most talked-about event in Moscow during the week of the crisis was the opening of the New York City Ballet."

In a 1976 interview, Betty Cage reflected that "perhaps we over-reacted, but we had visions of ourselves being impounded and put in concentration camps being kept for the duration, because it looked as though war was possible, so it was a real panic." The company was also worried that the Soviet government would attempt to detain Balanchine, as they'd originally feared. In the moment, the possibility of war and detention seemed very, very real. Years later, Lincoln Kirstein wrote of the strain of the crisis: "The tension, indeed the terror, of those few days and nights, without a blow ever being struck in anger, were more demoralizing than anything I had ever encountered."



It was at this point that Robert Maiorano was in the wings of the Kremlin's theatre, listening to the national anthems. "They're all on stage, vulnerable, 17 girls standing," he recounted. "And then when the curtain went up on *Serenade*...the whole audience, 6,000 people, rose up at the same time. And then they cheered."

To be received with such generosity at a time of great political tension made a deep and lasting impression on the dancers. They felt that they were cultural ambassadors, with a mission to connect on a human level. On October 28th, when Radio Moscow announced that the Soviet Union had accepted the U.S. proposal to end the stand-off, the company closed its run in Moscow at the Bolshoi Theatre. The applause was so vociferous that Balanchine came on stage to ask the audience to let them leave. Fans were still clamoring for an encore even as the company's bus pulled away from the theatre.



The Bolshoi Ballet's tour began auspiciously. Advance ticket sales had run up to \$600,000 (\$4.7 million today). Adlai Stevenson attended the New York premiere as the special guest of Ambassador Anatoly Dobrynin. UN Secretary General U Thant, who would mediate between the two powers to resolve the crisis, was also in attendance. Sol Hurok, the Ukrainian-American impresario who helped fund both the Bolshoi and NYCB tours, commented: "As long as they keep dancing and the diplomats keep talking, we'll have no war."

But the crisis—and the press coverage—only intensified in the days to come. Bill Lockwood, who was presenting the Bolshoi's run in San Francisco, found his plans for a sell-out week derailed by the announcement of the blockade on Cuba. The potential audience stayed home. Lockwood didn't believe that San Franciscans were trying to send a message to the Soviet Union; they were simply too preoccupied to think of going to the ballet (Throughout the Cold War, protests were frequently staged outside theatres when Soviet groups toured the United States).

By the time the Bolshoi circled back to the East Coast, the crisis had abated. The Kennedys took

great pains to make the company feel welcome. President Kennedy's first social outing after the crisis was to the ballet; he reportedly clapped louder and longer than anyone in his section, and went backstage with Ambassador Dobrynin to greet the dancers. Jackie Kennedy hosted the dancers at the White House, with Mrs. Dobrynin on hand as interpreter, and took young Caroline to watch the Bolshoi's leading ballerina, Maya Plisetskaya, in rehearsal. The President's mother and his brother Ted hosted the company on Cape Cod, throwing a Thanksgiving-style dinner party for Plisetskaya's birthday.



New York City Ballet continued its tour, through Leningrad, Kiev, Tbilisi, and Baku. Everywhere, they were enthusiastically received. The dancers appreciated the opportunity to perform in the historic Mariinsky Theatre in Leningrad, and their run in Balanchine's ancestral hometown of Tbilisi was a smashing success. At the end of thirteen weeks on tour, they returned to Moscow to fly back to New York via Copenhagen. A small crowd gathered on the tarmac, despite a developing snowstorm. Paul DeSavino looked out the window and was surprised to see the student to whom he'd given his jeans amongst the crowd of well-wishers. He was running alongside the plane, showing off the jeans, which he'd had washed and pressed. "It was the start of a blizzard, so it was really coming down, and there was this kid out there with a big smile on his face, pointing down to his jeans," he marvelled. The student had waited weeks for the chance to see them off.

Betty Cage had orchestrated publicity from afar, and reporters mobbed the company when they landed in New York. "A blonde mother with a ponytail hairdo rushed through Customs at Idlewild Airport yesterday evening, wanting more to see her 2-year-old daughter than to reflect on the eight-week tour of the Soviet Union," wrote the *New York Times*. The "blonde mother" was Allegra Kent, and photographers made sure to get a shot of her reunion with her daughter.

In his report for the State Department, Hans Tuch wrote of the success of the tour: "I believe that the New York City Ballet made a deep and lasting im-

pression on Soviet artists and intelligentsia who saw their performances and with whom they came into contact ... New York City Ballet deserves official recognition for its contribution to the U.S. objectives of the exchange program.”

But the dancers were most impressed by the connection they forged with the audience. “You know, art does bring people together, because nobody cared at the theatre,” Carol Sumner remarked.

“I’m so glad I had that experience, because I look at the world in a totally different way,” Teena McConnell recalled. The 1962 tour gave her the drive to see as much of the world as she could, and marked the beginning of her extensive travels. The dancers were deeply affected by what they saw in the Soviet Union. “It changed us... We grew up fast,” Sumner said. “Never complained about much after that.”

For Violette Verdy, the tour was an epochal event in the history of the art form. “It was the meeting of all those conceptions of ballet,” she remembered decades later.

And the meeting of national identities recognizing each other, and the blending of all those schoolings, and all those teachers and their legacies coming to life together, and it was incredible. I mean, a fantastic cocktail, you know. Just an incredible richness, a huge patrimony, huge.

Like a bouquet. A great big bouquet.

Moses Shapira claimed to have recovered a rough draft of the Bible—but what did the experts think?



## “The Lying Pen of the Scribes”: A Nineteenth-Century Dead Sea Scroll

by Michael Press

The original version of Deuteronomy.

That’s how the newly-discovered text was billed in August 1883. Several fragments of a 2,800-year-old scroll had made their way into the hands of Moses Shapira, an antiquities dealer in Jerusalem. According to Shapira, a group of Arabs

had hidden themselves, in the time when the Wali of Damascus was fighting the Arabs, in caves hewn high up in a rock about an hour east of Aroar, near the Modjib. They found there several bundles of old black linen. They peeled away the linen, and, behold, instead of gold,

which they expected to find, there were only some black inscribed strips of leather (called Nekesh, which means some signs or scratches), which they threw away (or I believe he said threw into the fire, but I am not certain); but one of them picked them up and kept them in great honour as charms, and he became a rich man, worth three hundred sheep.

Now Shapira offered the scroll to the British Museum provided they pay one million British pounds. It was an enormous sum at the time—but a small price to pay if the text was authentic.

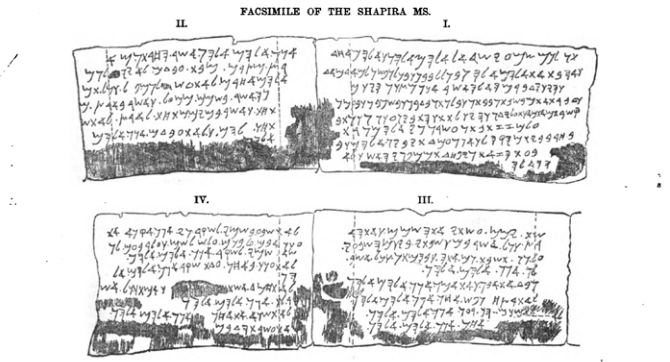


To find out, the British Museum enlisted the services of an expert Hebraist, Christian David Ginsburg. But in Shapira's eyes these tests of authenticity were mere formalities: he seemed convinced of its antiquity. In the meantime, the Museum put two of the fragments on display. Soon crowds were thronging to see it, including Prime Minister Gladstone himself. The original Deuteronomy was a sensation.

Another face in the crowd was Charles Clermont-Ganneau: archaeologist, biblical scholar, explorer of Palestine. He had been on Shapira's trail for over a decade. Ten years earlier, Shapira had sold a set of roughly 1700 figurines and pottery vessels to the Old Museum in Berlin as remains of the ancient Moabite civilization. Clermont-Ganneau played a crucial role in revealing the "Moabitica" to be forgeries, their script copying the recently discovered Mesha Stele, aka the Moabite Stone, which Clermont-Ganneau himself had been instrumental in publicizing and preserving. (Whether Shapira had any role in the fiasco beyond selling the artifacts was, and remains, unclear.) Now Clermont-Ganneau was closely scrutinizing Shapira's newest discovery. Not surprisingly, Shapira refused him access to the scroll. Ginsburg let him briefly inspect a couple of the strips, but for the most part Clermont-Ganneau was forced to catch glimpses through the crowds like any other member of the public. Despite these difficulties, Clermont-Ganneau rapidly reached his conclusion: the manuscript was a forgery.<sup>2</sup>

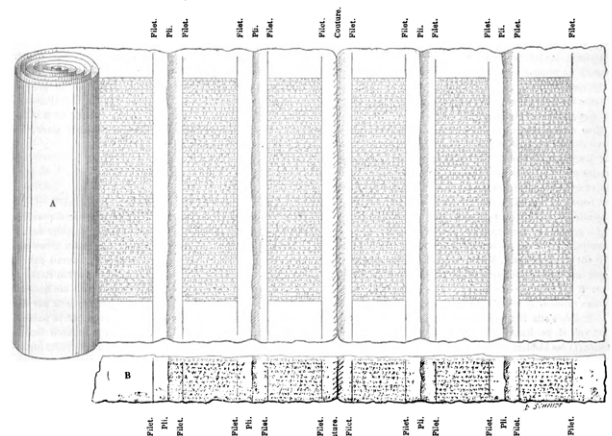
What's more, he implicated Shapira himself in the forgery. Clermont-Ganneau noted that Shapira had previously sold the British Museum a series of medieval Torah scrolls he had acquired in Yemen. According to Clermont-Ganneau, Shapira had formed the Deuteronomy strips by simply cutting the bottom margins of some medieval scrolls, then applying chemicals to the surface to give them the appearance of antiquity.

The public rejections of the scholarly community followed en masse. Adolphe Neubauer, rabbinic Hebrew scholar at Oxford, and



Ginsburg's facsimile of 4 columns of the Shapira Strips, including the Ten Commandments.

*The Athenæum*, September 8, 1883, p. 305.



A, représente le rouleau de synagogue sur lequel a été opéré le facsimile. — B, une des bandes soi-disant moabites obtenues par l'excision de la marge inférieure de ce rouleau.

Clermont-Ganneau's diagram of how he believed Shapira had made his strips.

*Revue politique et littéraire: revue bleue 3rd series*, no. 13 (September 29, 1883): 389.

Archibald Sayce, eminent Assyriologist and tutor at Oxford, had already had letters published in *The Academy* proclaiming the manuscript a forgery. Claude Conder, co-director of the Survey of Western Palestine, also published a letter in the *Times* denouncing the fraud. Then came the verdict for which everyone had been waiting: Ginsburg wrapped up his three-week analysis and declared the manuscript a forgery. Ginsburg, who was perhaps deliberately drawing out the process in order to build suspense and interest. Ginsburg, who in the past had approved of Shapira's sale of medieval Hebrew manuscripts to the Museum." On top of all of this, it soon came out that, before he arrived in London, Shapira had brought his strips to Germany, offering them for sale to the Royal Library in Berlin but meeting rejection from a series of distinguished scholars.

More than simply rejection, this was a public humiliation. Apparently it was too much for Shapira. He continued to argue for the genuineness of the manuscript, or at any rate for his innocence—even suggesting that if forged it must have been the work Clermont-Ganneau himself, in an effort to frame him. But Shapira quickly fled England for Amsterdam, then Rotterdam where he checked into a hotel, and, on March 9, 1884, shot himself.

As for the manuscript itself: Shapira had left it with the British Museum when he fled England in haste. It was bought by the bookseller Bernard Quaritch in a Sotheby's auction in 1885. Quaritch himself offered them for sale two years later, for a sum of £25. The manuscript that had once been valued at a million. It was subsequently lost: Alan Crown's research suggests that it was likely acquired by Sir Charles Nicholson, an important figure in the founding of the University of Sydney, and likely burnt in a fire in Nicholson's study in England in 1899.

And so ended the story of the ill-fated Shapira Deuteronomy.



There's a good reason why the story of Shapira's scrolls might sound familiar, despite its obscurity. The tale of their discovery is remarkably similar to that of a far more famous find related to the Bible.

Six decades later, in the winter of 1946-47, an Arab shepherd named Muhammed edh-Dhib followed a stray goat into a cave at Qumran, near the Dead Sea. There he and two friends discovered seven fragile scrolls of animal hide, wrapped in linen and stuffed into an ancient jar. These were the first of the Dead Sea Scrolls: a series of texts including the oldest manuscripts of most of the books that would eventually make up the Hebrew Bible/Old Testament, as well as many other lost writings. It was a discovery that would capture the world's attention, ignite considerable controversy, and revolutionize our knowledge of ancient Judaism and Christian origins.

Looking back today, the similarities between the two narratives of biblical finds at the Dead Sea must give us pause. Many of the original objections to the Shapira scrolls now seem obsolete, even humorous. For instance, several eminent scholars were convinced that no sheepskins could survive for thousands of years in Palestine. Archibald Sayce dismissed the find in this way:

It is really demanding too much of Western credulity to ask us to believe that in a damp climate like that of Palestine any sheepskins could have lasted for nearly 3,000 years, either above ground or under ground, even though they may have been abundantly salted with asphalt from the Vale of Siddim itself.<sup>3</sup>

Meanwhile, in the publication of his results in the *Times*, Ginsburg listed a series of criteria by which he could conclude that the strips were forged: external criteria (relating to the format of the strips themselves, and echoing Clermont-Ganneau's arguments), and internal criteria (relating to the script, the language, and the text). These include the short height of the strips (only 8-9 cm), the vertical lines serving as margins for each columns (but with text extending beyond them), the use of dots as word dividers.

Yet these feature, as identified by Ginsburg and others, are matched on at least some of the actual Dead Sea Scrolls. While Shapira's manuscript may not work as a ninth or eighth or seventh-century text, in several respects it does resemble texts from the last two centuries BCE. By that time, the old Hebrew script of the Iron Age—what Shapira's

manuscript is written in—had been replaced in most writing by the square Jewish script adapted from Aramaic writing. However, there was a revival of the old script, referred to as paleo-Hebrew, in some special cases. These include coins of the second century B.C.E. through the second century CE—and a few of the Dead Sea Scrolls, especially books of the Pentateuch (like Deuteronomy), presumably because they were seen as most ancient. This would also account for some of the late (post-biblical) forms and vocabulary identified by Neubauer and the German bibli-cist Hermann Guthe.

Not only that, but as has been widely ob-served, the discoveries of the 1940s and 1950s were not the first time that scrolls were found in the vicinity of the Dead Sea. In the last few decades, scholars have traced a long history of reports of scroll discoveries in the region. As early as the third century C.E., the church father Origen described manuscripts found in his time in a jar (or jars) near Jericho; the report was repeated by Eusebius, Athanasius, and Epiphanius in the following centuries. Around 800 C.E., Timotheus, bishop of the Eastern Orthodox church in Baghdad, wrote about a similar discovery of non-canonical scrolls; the story he told is again eerily sim-ilar, of an Arab hunter who followed his dog into a cave. Meanwhile, in the tenth century, Ya'qūb al-Qirqisānī, a Karaite scholar (Kara-ism being a breakaway Jewish movement, originating in the Middle Ages, which did not recognize the authority of the Talmud), discussed an ancient group of people known as al-Maghāriyah (the “cave people”) because they left books in caves.<sup>4</sup>

In light of these sorts of considerations, sev-eral scholars lobbied for the case of Shapira's Deuteronomy to be reopened. These includ-ed Menahem Mansoor, professor of Hebrew at the University of Wisconsin; and the eccen-tric Dead Sea Scrolls publication team mem-ber John Marco Allegro, perhaps best known for his book *The Sacred Mushroom and the Cross*. In fact, the parallels occurred to more than simply those who wanted to reevaluate the Shapira case. The most prominent critic of



A second century C.E. coin from the Bar Kokhba revolt with Paleo-Hebrew script. The left inscription reads “For the freedom of Jerusalem” and the right reads “Year two of the freedom of Israel.”



1. A Single Fold of the Manuscript, Two Thirds of the Original Size.—2. One of the Strips of Leather on which the Manuscript is Written (AAA are the Joins).—3. The Wady, near Aroer, Palestine, Where it is Alleged the Manuscript was Found.—4. Various Specimens of Ancient Writing.—5. Ancient Dolmen (Helle of the “Giant” Mentioned in the Manuscript) in Judah Valley.

THE SHAPIRA MANUSCRIPT OF DEUTERONOMY.



the Dead Sea Scrolls' authenticity upon their initial discovery, Solomon Zeitlin of Dropsie College, dismissed them as either medieval texts or modern forgeries—arguing in part because of their similarity to the Shapira strips!

So should we reconsider the authenticity of Shapira's nineteenth-century Dead Sea scroll?

In my opinion, we must still conclude that Shapira's scroll was a forgery. Beyond any external or internal criteria, consider this simple fact: we are dealing with a manuscript that can only be traced back to an antiquities dealer, whose story about their discovery has never been verified—a dealer, moreover, who had previously been involved in the sale of forged artifacts. Especially since the strips themselves are lost, we must adopt the position that they are a fraud as our default. Beyond this, of course, some of the objections raised by Ginsburg and others are most certainly legitimate: certain lexical items, forms, and spellings are bizarre in any period. There are also various aspects of Ginsburg's facsimile, such as the form of the letters themselves: they are typical of monumental inscriptions in stone, not of paleo-Hebrew manuscripts written in ink.

The text, in short, is almost certainly a fake.



In the nineteenth, twentieth, and even twenty-first centuries, the Shapira manuscript has provoked a particularly hostile reaction: invective, hyperbole, ridicule, and more, directed both at the manuscript and at Shapira himself.

William F. Albright opined shortly after the announcement of the Dead Sea Scrolls:

Since several scholars have compared the new Scrolls to the so-called archetype of Deuteronomy, offered by the notorious forger Shapira to the British Government for a million pounds, it should be emphasized that there is nothing whatever in common between them except the fact that texts of the Hebrew Bible written in ancient scripts are involved [emphasis in original].

A similar dismissive tone, but even more hostile, can be found in the responses of scholars like Moshe Goshen-Gottstein and Oskar Rabinowicz. The articles of Goshen-Gottstein and Rabinowicz include quite personal attacks against those asking for a reevaluation of the evidence, specifically Mansoor and Allegro—attacks based on no more than a cursory presentation of the evidence.

More recently, consider the discussions by Kyle McCarter and André Lemaire in the more popular magazine *Biblical Archaeology Review*. Lemaire welcomed the opportunity to revisit the episode, but then simply affirmed the objections of Ginsburg and Clermont-Ganneau—even though many of these apply just as much to the Dead Sea Scrolls. Most remarkably, he asserts (and repeats in a letter to the editor in *Biblical Archaeology Review* in response to Mansoor) that *het/kaf* and *tet/tav* confusions do not occur in ancient texts. This is simply wrong: both confusions are attested multiple times in texts from Qumran.

Meanwhile, McCarter claimed that interest at the time in Britain, in the Shapira manuscript and in the Bible and religion more generally, was due largely to the work of biblical critic Julius Wellhausen (the second edition of his seminal *Prolegomena*, and the first edition under that title, was published in German that same year). While some British accounts of the affair (by both scholars and journalists) refer to the work of biblical critics generally, many do not, and biblical criticism is never a major focus of the responses; Wellhausen and his work are never named; and the second edition was not translated into English until 1885. And in Germany there was no similar reaction when Shapira brought his strips. Even in Guthe's book on the Shapira manuscript, published in Germany in 1883, Wellhausen's name is limited to three footnotes on minor points, and none is to the *Prolegomena*. Certainly, we would do better to contextualize the public excitement in England in the religious climate of the day, and natural interest in an ancient (and possibly "original") manuscript of Deuteronomy.<sup>5</sup>

I do not mean to call into question the integrity of these biblical scholars and archaeologists and epigraphers. My point is a different one: even prominent, important scholars have been quick to

dismiss the Shapira strips, often with sloppiness and hostility. Even those expressing interest in a reevaluation have done so without proper analysis or context. Most, however, have been swift to reject them, often without careful consideration—and in fact to condemn or ridicule both the scroll and Shapira personally, in decidedly non-scholarly language.

The same is true, as we have seen, for the original response to the strips. Personal attacks are widespread in the public letters of Clermont-Ganneau, Neubauer, and others. Neubauer, like Goshen-Gottstein later, explicitly rejected the need to waste much time with a comprehensive review. In particular, consider the comment of Sayce quoted above. Or Clermont-Ganneau, in his first letter to the *Times*:

Let there be given me a synagogue roll, two or three centuries old, with permission to cut it up. I engage to procure from it strips in every respect similar to the Moabitish strips, and to transcribe upon them in archaic characters the text of Leviticus, for example, or of Numbers. This would make a fitting sequel to the Deuteronomy of Mr. Shapira, but would have the slight advantage over it of not costing quite a million sterling.

As the London newspaper *The Echo* put it at the time, “From the moment that the discoveries were declared to the world there was an eagerness in many quarters, quite inconsistent with the true spirit of criticism or scholarship, to stigmatize them as forgeries.”

What is the reason for this reception? What accounts for such an unfavorable ratio of scholarly care to overheated rhetoric?

I think we can offer a series of answers for the particularly hostile response to Shapira’s exhibition of the scrolls in 1883. One, of course, is that Shapira had already been revealed once as a seller of forged objects. In particular this may have animated Clermont-Ganneau, and it may have led to a personal vendetta on his part against Shapira. (It is worth noting that there may also have been tension between Ginsburg and Clermont-Ganneau, as Ginsburg had previously implicated Cler-



A caricature of Shapira and Ginsburg from *Punch*.  
*Punch*, September 8, 1883, p. 118.

mont-Ganneau’s actions in inadvertently contributing to the dismantling of the Mesha Stele.) But this is not enough. After all, the revelation of the Moabitica forgery did not stop Ginsburg’s approval of the medieval scrolls Shapira sold to the British Museum. Nor did it affect the opinion of other scholars concerning these manuscripts: In a letter published in the June 11, 1881 edition of *The Academy*, Sayce praised a collection of such manuscripts Shapira was bringing to London, concluding: “It would be a pity if the collection were allowed to go to Berlin like its predecessor.”

Another answer is racism. Several responses to the Shapira affair highlights Shapira’s Jewish heritage (he was born Jewish but had converted to Anglicanism). Walter Besant, secretary of the Palestine Exploration Fund, recalled Shapira this way in his autobiography: “a Polish Jew converted to

Christianity but not to good works.” Of particular interest is a cartoon appearing in the British humor magazine *Punch* in September 1883.<sup>6</sup>

The cartoon depicts Ginsburg apprehending Shapira, with the latter caricatured in a stereotypically anti-Jewish manner, particularly with a large nose. Of course, not only was Shapira a Jewish Christian convert, but so was Ginsburg—who is not negatively stereotyped in any way. In fact, this differential treatment of the two converted Jews is typical of the British press, which (as Fred Reiner has discussed) lionized Ginsburg as protector of England from the scheming Shapira. (In this narrative, the earlier critiques of Neubauer and especially of the Frenchman Clermont-Ganneau are forgotten—a fact that Clermont-Ganneau complained about at length in his *Les fraudes archéologiques*.)

It may be that Shapira was targeted specifically as an *eastern Jew*: born in Russia and, even worse, living in Jerusalem. Thus W.J. Loftie wrote at the time in the literary magazine *The Manhattan*: “It seems strange, however, and not easy to believe, that anyone living at present in the semi-barbarous Levant can write in the letters of the ancient Phoenicians with such ease and accuracy as to deceive.” (Actually, Loftie scored a two-fer: just before this he had criticized Clermont-Ganneau for his “truly French self-complacency.”) Compare a quote from a later review of the affair by John A. Maynard:

In these Eastern lands, blessed with intense sunshine, there is no such thing as a cold fact. The sheen of romance which has escaped so many of our scholarly Bible critics makes fiction very real to its creators. There the liars come very soon to believing their own lies.”

But all of these reactions to Shapira postdate the rejection of his manuscript. In that light, they may be better seen as a symptom of the rejection and not as a (major) cause.

On the other hand, what if we look at the Shapira scroll and its reception in the context of other scroll discoveries, or claims of scroll discoveries, and their reception? The ancient reports generally do not even hint at suspicion of genuineness: Origen, Eusebius, Athanasius, Epiphanius, Timo-

theus, al-Qirqisānī, all accept the reports at face value.

What accounts for the difference? The answer seems simple enough: the rise of modern critical scholarship. The development of linguistic competence in both language and script, and the ability to provide proper historical context, have revolutionized how we understand ancient texts, and how we understand the ancient world itself.

In “Why All the Fuss?” McCarter suggests that one reaction of the public to the Shapira manuscript would have been to question the validity of critical biblical scholarship. And to a limited extent we do see this reflected in newspaper article at the time; it is also echoed in the “scoffing atheists” in the Quaritch listing. But we must not forget that biblical scholarship itself is not an objective critical enterprise. It, too, is deeply rooted and intertwined with religious views. The Shapira manuscript, a purported original or ancient version of Deuteronomy with many divergences from the canonical version, could have been seen as a threat both to critical scholarship and its religious foundations. And in fact this view appears explicitly in the comments of Konstantin Schlottmann, Protestant theologian and scholar, who had responded to Shapira about the manuscript when Shapira claimed to have first received it, back in 1878: “How dare I to call this forgery the Old Testament? Could I suppose even for a moment that it is older than our unquestionable genuine Ten Commandments?”<sup>7</sup>

We see the potential, realized with Schlottmann, for even scholarly response to be entangled with religious belief. This should not be surprising: modern biblical scholarship has been overwhelmingly Protestant, both in its origins and in its practitioners. Its roots are found in the two towering movements of the Renaissance and the Reforma-

Note the exception of Moses Taku in the thirteenth century: he claimed that earlier Karaites had written books and then hidden them in the ground, finding them and claiming them to be ancient. This is the only exception I am aware of, and it raises several questions: How exceptional is he? Is this a matter of a specific mainstream Jewish vs. Karaite polemic? A difference between medieval Jewish vs. Christian attitudes? A chronological difference?



tion, with their mottos *ad fontes* (“to the sources”—not only classical antiquity but also biblical antiquity) and *sola scriptura* (“by scripture alone”). The Protestant background of biblical scholarship has been long acknowledged. But this is mostly a neutral observation, or a positive praise of its critical tools; it has rarely been acknowledged that this origin might have a negative side.

The development of historical context and perspective, from the perspective of “to the sources” and “by scripture alone,” has led to a near obsession with origins, and specifically with origins of Scripture. Discovering the *original* documents behind the Pentateuch, establishing the (single) original form of the biblical text, reconstructing the (single) source (Vorlage) of a biblical translation—these have been among the most important goals of modern scholarship. Perhaps this may explain how, when the Dead Sea Scrolls were first brought to the attention of scholars, before archaeological excavations at Qumran confirmed their authenticity, they were generally accepted by scholars: unlike the Shapira scroll, they did not claim to be original versions of biblical books but part of a later stage in the process of transmission. Consider the reaction of biblical scholar Harry Orlinsky to the Dead Sea Scrolls: he believed them to be of limited importance for biblical studies, because they had little bearing on the original form of the biblical text.<sup>8</sup>

If we reconsider John Maynard’s statement above, we realize it may be quite helpful for understanding ancient modes of thinking. The focus on “cold facts,” on origins and linear evolution, on our Bible, can mislead us when we turn to the variety of sacred writing and the variety of textual forms for individual books throughout so much of antiquity. In other traditions, at other times, scripture did not necessarily equal Scripture. It is an illuminating way to consider things like pseudepigrapha, instead of as “pious frauds”—and of course the original “pious fraud” of the Bible, the book of Deuteronomy itself. It is perhaps the ultimate irony that the Shapira strips pretended to be the original version of a book that scholars think in some sense was “fake”: scholarly consensus holds that Deuteronomy is the ancient book of the law referred to in 2 Kings 22, claimed to be miracu-

lously “found” in the reign of Josiah king of Judah, but in fact written at that time.



While on the one hand modern biblical scholars stand apart from earlier readers of the texts in their historical and philological concerns, on the other hand we too have been thoroughly influenced by our environments—personal, cultural, or religious. We cannot simply draw a bright line between ancient and modern interpreters. Broadly speaking, our understandings are not purely “objective”: they are formed from a range of influences and agendas, as the Shapira incident demonstrates clearly.

In biblical scholarship in particular, those understandings, like the understandings of ancient readers, cannot be divorced from considerations of religion—especially when considerations of religion are intimately integrated into the very methods we as scholars use. I am by no means dismissing the importance of historical and philological approaches, or of the advances made by modern scholarship in understanding the ancient world. But those advances are ultimately limited by our distance from that world, and by the fragmentary state of its remains. The result is that the remaining pieces are filled in to some extent by our own imaginations.

Paradoxically, the study of the past always keeps one eye on the future. Historical research is important not simply for its own sake, but for what we can learn from it and apply to the future. More than that, our understandings of the past are always in flux, changing with the discovery of new data, and changing as we ourselves change and adopt new paradigms. In order to understand the past better, we need to accept a simple truth about ourselves: we are merely the latest in a long line of interpreters of texts—another chapter in the reception of antiquity.



## Notes

1. The story of the Shapira manuscript’s discovery and its immediate aftermath has been told sever-

al times; I rely especially on the very useful article by Fred N. Reiner, "C.D. Ginsburg and the Shapira Affair: A Nineteenth-Century Dead Sea Scroll Controversy," *British Library Journal* 21 (1995): 109-127; also Menahem Mansoor, "The Case of Shapira's Dead Sea (Deuteronomy) Scrolls of 1883," *Transactions of the Wisconsin Academy of Sciences, Arts and Letters* 47 (1958): 183-225; and most recently Martin Heide, "The Moabite and Their Aftermath: How to Handle a Forgery Affair with an International Impact," in *New Inscriptions and Seals Relating to the Biblical World*, ed. M. Lubetski (Atlanta: Society of Biblical Literature, 2012); in addition to a series of primary sources (indicated below).

2. On the revelation of the forgery, see Clermont-Ganneau's own book *Les fraudes archéologiques en Palestine* (Paris: Ernest Leroux, 1885); published in original form as "Un prétendu manuscrit original de la Bible," *Revue politique et littéraire: revue bleue* 3rd series, no. 13 (September 29, 1883): 385-393. Meanwhile, the series of events involved in the discovery of the Mesha Stele and its recovery for the Louvre form an epic tale by themselves.

3. A.H. Sayce, letter to *The Academy*, August 18, 1883, p. 117. Similarly, Claude Conder: "It appears quite impossible that leather can have been preserved so long in the damp atmosphere of a country with 20 inches of annual rainfall, and as an explorer I am well acquainted with the damp mouldy smell of all the tombs and caves of the country" (Claude R. Conder, *Heth and Moab*, London: Richard Bentley & Son, 1883, p. 429); and Adolf Neubauer: "Our readers will remember the fate of the famous MS. of Deuteronomy, brought to this country by the late Mr. Shapira, who also maintained that it was lying buried in a cave in Moab during several thousand years. The only country in which written documents of old date can be preserved is Egypt" ("The Bahir and the Zohar," *Jewish Quarterly Review* 4 (1892): 360). See also similar comments by Philip Schaff of Union Theological Seminary (recorded in *The Critic*, number 82, Sep 8 1883, "The Lounger," p. 361).

4. For a convenient discussion of all these examples, see Jeffrey H. Tigay, "'Archaeology' of the Bible and Judaism in Late Antiquity and the Middle Ages," pp. 490-497 in *The Archaeology of Jordan and Beyond: Essays in Honor of James A. Sauer*, ed. L.E.

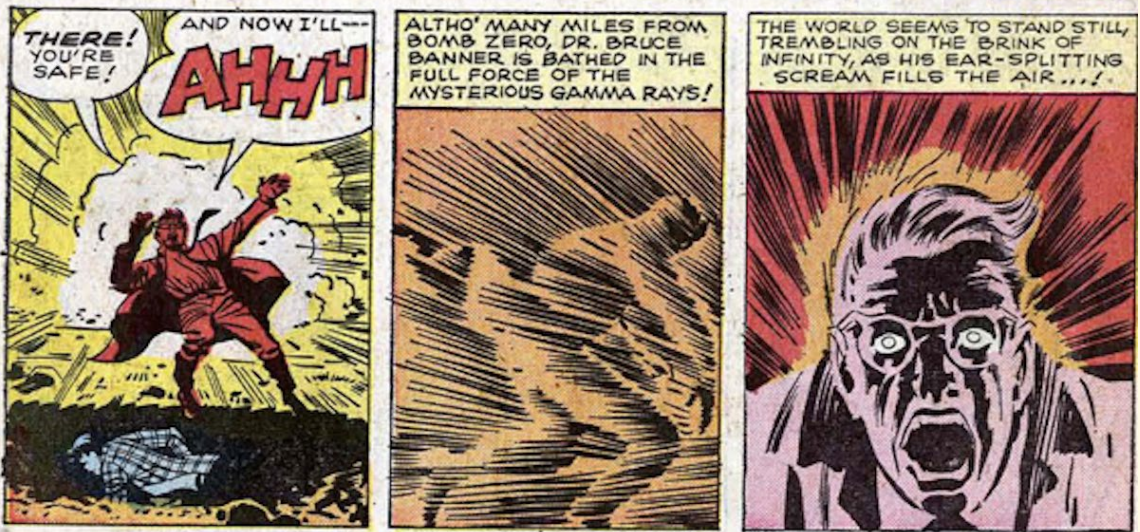
Stager, J.A. Greene, and M.D. Coogan. (Harvard Semitic Museum Publications, Studies in the Archaeology and History of the Levant 1) Winona Lake, Ind.: Eisenbrauns, 2000.

5. Mansoor made similar remarks about the public reception in England in his reply in "Queries & Comments," *Biblical Archaeology Review* 23 no. 5 (September/October 1997). This also fits the description of public excitement over the supposedly original Deuteronomy given by Clermont-Ganneau in *Les fraudes archéologiques*.

6. *Autobiography of Sir Walter Besant* (New York: Dodd, Mead and Company, 1902). Besant added: "The man was a good actor; he was a man of handsome presence, tall, with fair hair and blue eyes; not the least like the ordinary Polish Jew, and with an air of modest honesty which carried one away."

7. For an example, a detailed consideration of how Protestant anti-Catholic polemic has affected discussion of early Christianity, see Jonathan Z. Smith, *Drudgery Divine*.

8. Again I am most grateful to Eva Mroczek, as these conclusions are based in part on her ideas about the diversity of sacred texts and especially in psalms collections in antiquity. See for now her "The Mirage of the Bible in Jewish Antiquity: The Case of the Psalms," paper presented at Textual Unities Conference, Yale University, October 2013.



# I Sing the Body Atomic: Nuclear Transformation in the Marvel Universe

by John Wenz

In the 1960s, Marvel Comics went atomic. The mystically inclined or serum-imbued superheroes from earlier decades gave way to scientific heroes who conquered the atom—or were conquered by it. At the core of these books were nuclear metamorphoses that turned ordinary people into weaponized paragons of the Atomic Age.

The Marvel Comics universe has, since its 1930s beginning as Timely Comics, hosted a diverse array of heroes, villains, anti-heroes, conflicted bad guys, ordinary folks, and morally ambiguous beings. Between 1961 and 1964, Marvel entered its most iconic era, debuting *The Fantastic Four*, *Daredevil*, *The Avengers*, *The X-Men*, *Iron Man*, *Ant-Man*, *The Incredible Hulk*, among other notables. These atomic heroes soon became as synonymous with Marvel Comics as *Captain America*, Marvel's flagship hero of the 1940s.

The early heroes of the Marvel label encapsulated the concerns and scientific progress of the time. *Captain America* emerged at a time when modern physicians were perfecting new vaccines for debilitating diseases. So if an injectable serum could

prevent disease, it could also turn a 98-pound weakling into a peak-human marvel. Marvel debuted few—if any—heroes in the 1950s. But in the post-Comic Code era (1954 onwards), their focus shifted to sci-fi and monster comics which would eventually metamorphose into a second superhero era.

The Marvel of the 1960s harnessed contemporary science headlines to give their superheroes new ways to gain power. Rather than using serums and potions to imbue individuals with superpowers, Marvel bonded its superheroes to the atom. Superheroes became living atomic weapons. Yet in the process, they also became vessels for atom-

Before infusing atomic science into their heroes, Early Timely heroes got their power from other sources. *Captain America* and *The Whizzer* were given serums that enhanced their strength or speed—an external infusion of power. *The Human Torch*, *The Vision* and *Namor* were born or created that way—a divine right of sorts. Finally, *The Angel* and *Blonde Phantom* had no greater power than extraordinary hubris and a zest for justice—a mixture of skill and work ethic.



ic fears and the bodily horrors of mutation the atom could cause. The same atomic sources that birthed their superpowers also negatively impacted their life.



The Age of the Atomic Superhero started with a rogue scientist who rocketed his fiancé, her brother, and a pilot into near Earth orbit, catapulting them into the space race “to beat the Russians.” And thus were born the Fantastic Four. As Rafael York puts it in his study of Cold War comics, “In the case of *The Fantastic Four*, it is not the mystery of nuclear power that creates trepidation, but the effects of cosmic rays on humans, but in a fundamental sense the source of the fear remains the same. It is the fear that scientists will be unable to control the forces with which they tamper.”

With nuclear weaponry came nuclear paranoia. In the same year as the first issue of *Fantastic Four*, the world came precariously close to nuclear war with the Bay of Pigs incident. While science was making leaps and bounds—the space race was on its way, nuclear weapons begat nuclear power, and vacuum tubes were replaced with transistors—the

Though by the time of the issue’s November publication, Yuri Gagarin had already beat the Americans to space by five months.

idealism of the 1950s was crumbling. Technology was becoming a race, a space race, an arms race, a race to the technological top.

By rocketing his friends into space, Reed Richards, a doctor of some unspecified science affiliated with an unnamed university, was flinging himself into the nascent space race. But the mission lacked the sort of precautions necessary to survive in deep space. While cosmic rays may have been a comic book means to an end, they also represented an unknown. In 1957, we were only beginning to understand space. It remained a mysterious void. By thrusting himself into the void, Richards and crew opened themselves up to what this unknown environment could unleash on them.

In *Fantastic Four* #4, the Fantastic Four encounter Namor, the Sub-Mariner, whose home of Atlantis had been destroyed by nuclear catastrophe. Vowing revenge, the Sub-Mariner summons a leviathan, Giganto, to punish humanity for their carelessness with their nuclear projects. As York summarizes the episode:

When the Sub-Mariner unleashes his atomic bomb on New York, it is only fitting that The Fantastic Four should retaliate with its own nuclear bomb. The Thing only acquires the necessary ordnance after racing “from one military depot to another,” indicating that the



Pilot Benjamin Grimm transforms into The Thing for the first time after his exposure to cosmic radiation. Stan Lee and Jack Kirby. *Fantastic Four*, Marvel Comics, Vol 1, No 1, November 1961.

United States government is not only aware of the intended use of the bomb, but that it is complicit in the bomb's detonation. The Thing's bomb proves to be more powerful than Giganto, and in this story, the US emerges victorious in the arms race.

It's perhaps ironic that The Thing employs a nuclear weapon to destroy a creature summoned to punish acts of nuclear aggression.

In May, 1962, Stan Lee grabbed the headlines again, introducing a new atomic quasi-hero, the Incredible Hulk. In the first issue, a scientist working on the Gamma Bomb named Bruce Banner absorbs radiation owing to sabotage at the hands of a communist agent. Banner absorbs the radiation, and unleashes his inner Id: a grey brute called The Hulk. In Lee's atomic age vision, Dr. Jekyll meets Mr. Hyde through gamma radiation.

The Hulk's skin would later turn green, but it didn't repair his tortured soul. More than most heroes, the Hulk agonized over the consequences of his nuclear nature. Not only was his body transformed continuously into the inner horrors of Bruce Banner, but he would later lose his wife (for a period of time at least, this being Marvel) to radiation poisoning.

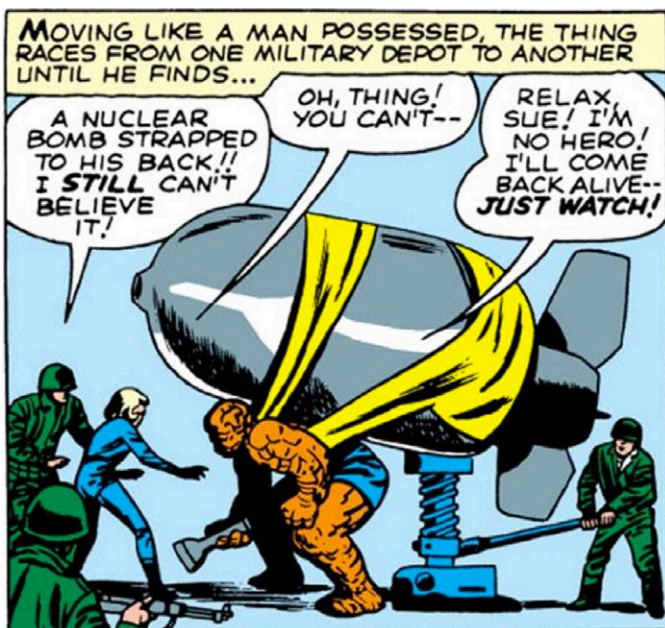
As with Reed Richards, Bruce Banner gained his powers by becoming the victim of his own research. While Richards and the other members of the Fantastic Four exposed themselves to radiation through pure hubris, Bruce Banner knew the dangers of the gamma bomb. As the Hulk, Banner took on the characteristics of his own weapon and unleashed his temperamental Id.



If you needed a not-so-super generic villain in those days, you went with a communist spy. A simple act of sabotage often led to the accident that birthed the superhero. This trope is also used in *Iron Man* and the *Fantastic Four*.

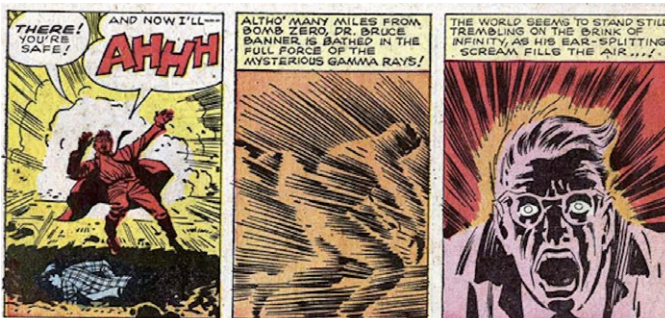


Namor, Marvel's first superpowered character, returns to Atlantis to discover it destroyed by atomic weapons.



The Thing straps an atomic bomb to his back to destroy a leviathan summoned by an angry Namor.

Stan Lee and Jack Kirby. *Fantastic Four*, Marvel Comics, Vol 1, No 4, May 1962.



Bruce Banner absorbs the payload of a Gamma Bomb and somehow escapes being instantly vaporized.

Stan Lee and Jack Kirby. *The Incredible Hulk*, Marvel Comics, Vol 1, No 1, May 1962.



By writer Stan Lee's own admission, the comic book was a propaganda vehicle. Looking back at the previous decade in 1975, Lee enjoined his readers to remember that "most of us genuinely felt that the conflict in that tortured land [Vietnam] really was a simple matter of good versus evil":

that the American military action against the Viet Cong was tantamount to St. George's battle against the dragon. Since that time, of course, we've all grown up a bit, we've realized that life isn't quite so simple, and we've been trying to extricate ourselves from the tragic entanglement of Indochina.

Lee also had in mind a Marvel hero whose origin story begins in Vietnam: Iron Man, née Tony Stark. Ant-Man, Wasp, The Hulk and Iron Man would eventually accidentally congeal into a heroic team known as The Avengers, alongside the distinctly non-atomic Norse thunder god Thor. The team of weapons came together in *Avengers* #1, quite accidentally. The villain, Loki, even weaponizes himself.

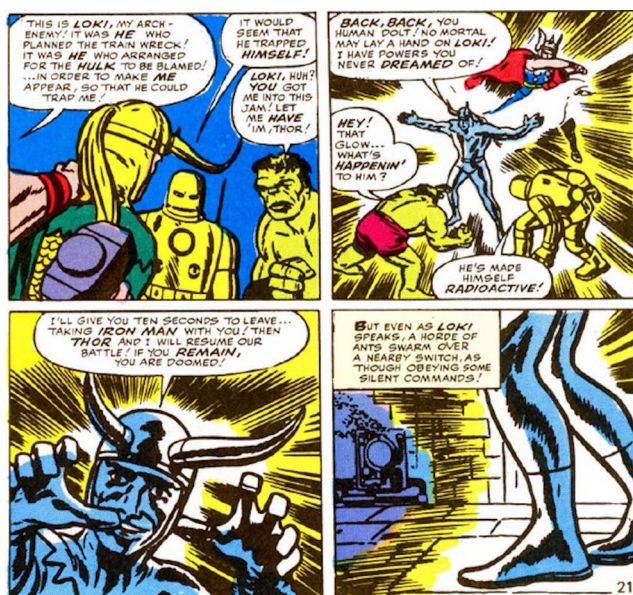
To vanquish the villain, The Avengers seal Loki away in a lead vault to expend the energy. The team debate depositing him in an ocean vault

along with other lead-sealed nuclear waste—a solution that sounds fantastical now but was an actual practice. Ultimately they resolve to free him once his "fuel" is spent. Loki, in order to take on the Avengers, must become atomic himself. And while The Hulk, Iron Man, Thor, Ant-Man and Wasp are allowed to continue making displays of atomic force, they must contain and dispose of the enemy before he wields the power of the atom.

It was the nuclear arms race, redux: we need the top of the line weapons in order to subvert whatever weapons the enemy may have.



Perhaps the most iconic Atomic Age hero of all is Spider-Man, who first appeared in *Amazing Fantasy*. For all his reluctance to delve into heroics, Peter Parker, as Spider-Man, became and continues to be one of Marvel's most enduring protagonists. *Amazing Fantasy* was cancelled that very issue, but Stan Lee and Steve Ditko's creation would be back in *Amazing Spider-Man* #1. The issue introduced newspaper publisher J. Jonah Jameson, Spider-Man's nemesis and Peter Parker's boss. After saving Jameson's astronaut son, who was just "mak(ing) his country proud," the *Daily Bugle* lambasts him as a menace, despite his heroic effort.



"I have powers you never dreamed of!"

Stan Lee and Jack Kirby. *The Avengers*, Marvel Comics, Vol 1, No 1, August 1963.

Spider-Man gains his powers from a radioactive spider, and other atomic MacGuffins propel the plot as well. In *Amazing Spider-Man* #1 Spider-Man tussles with the villainous Chameleon, a freelance mercenary gathering atomic secrets for any Iron Curtain country willing to pay the right price. But Spider-Man manages to best the villain, but not before nearly being arrested himself. The end of the issue has Parker running away, wishing he'd never gained his powers.

Peter Parker, as a teenager thrust into the midst of the superhuman arms race, emerges as a different sort of hero than the Fantastic Four, the Hulk or Iron Man. Peter Parker wasn't the victim of hubris or accident or invention of the characters' own design. He was a witness to the scientific progress of the era, and was the innocent bystander to it all—a victim of ambient radiation and transformation.





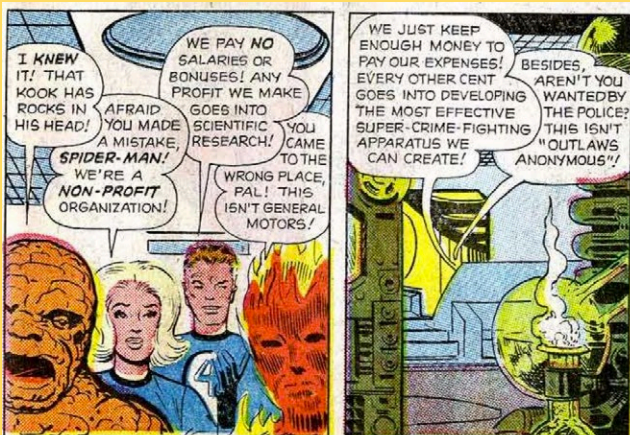
Spider-Man enters the Space Age on his second adventure.  
Stan Lee and Steve Ditko. *Amazing Spider-Man*, Marvel Comics, Vol 1, No 1, March 1963.

Parker embodied the dark side of science. Even in his second adventure, he's trying to prevent a catastrophe in the space race. Like the Hulk, he would become an outcast, never fully fitting into the role of hero in the public eye in the way the citizen scientist Fantastic Four or peacekeeping soldier Avengers could. Peter Parker was what could happen to the common man in the face of the scientific era.



The X-Men were the so-called "Children of the Atom," the title lifted from a Wilmar Shiras novel of the same name. The X-Men were bodily transformation—and occasionally body revulsion—personified. They were teenagers who, at the onset of puberty, exhibited a mutated gene on the 23rd chromosome that caused strange powers to manifest. The X-Men were living weapons, persecuted by the world. Or as they put it, "Hated and feared by a world they were sworn to protect."

As Lee puts it, "The minute it hit me I knew the concept was basically sound. Mutation is a scientific fact of life; it's plausible, possible, practical, and provable. Best of all, it would allow Jack and me the fullest scope for our imaginations. When thinking of all possible variations of normal human beings, the sky's the limit—whatever power we conceived of could be justified on the basis of its being a mutated trait." Lee, p. 14.



Spider-Man finds out that being a member of the Fantastic Four is basically an unpaid internship.  
Stan Lee and Steve Ditko. *Amazing Spider-Man*, Marvel Comics, Vol 1, No 1, March 1963.



Charles Xavier meets the McCoy's, including their big-limbed son. Unlike his teammate Iceman, Hank McCoy received unconditional support from his parents.

Stan Lee and Jack Kirby. *X-Men*, Marvel Comics, Vol 1, No 15, Sept 1963.



The sometimes-X-Man Sunfire makes his first appearance, this time as an antagonist to the mutant team.

Roy Thomas and Don Heck. *X-Men*, Marvel Comics, Vol 1, No 64, Sept 1963.

Two X-Men characters in particular stand out as “Children of the Atom,” as their mutations came from a parent’s direct exposure to radiation.

The mutation of Hank McCoy—better known as the Beast—resulted from his nuclear engineer father’s exposure to radioactive elements. The transformations of McCoy offered a window into 1960s America’s horror of the effects of radiation. His hands and feet are giant sized, his posture not unlike an ape. In later iterations, he sprouted fur.

The second atomic X-Man was the Japanese superhero, Sunfire, née Shiro Yoshida, introduced in 1970’s *X-Men* #64. His powers came from a parent’s direct exposure to radioactivity. Shiro Yoshida blasted beams of plasma, as if he were the embodiment of hydrogen fission, with the temperament to match. Unlike Beast, that exposure wasn’t from a power plant, but from his mother’s exposure to the horrors at Hiroshima. His mother later died of radiation poisoning. For Marvel, this was a rare nod to real-world consequences of the Atomic Age.

Coming after Stan Lee’s tenure on *X-Men*, Yoshida was a realistic response to nuclear aggression. He was angry, having lost his family to atomic violence. And like Peter Parker, he was unwittingly the recipient of someone else’s payload, given powers he never asked for in the fall out of the act of nuclear warfare. In this sense, Yoshida was the antithesis of Marvel heroes that had come before. He was cursed, not blessed, by the atom.



Since the Marvel Universe’s Big Bang in 1939, Marvel’s comics kept pace with science in vogue—or at least science that was familiar to its audience. Daredevil, a lawyer blinded by the same nuclear accident that gave him his radar sense, was introduced in 1964, the last major hero of the atomic era. By 1965 Marvel had largely begun to shift away from atomic rooted powers, incorporating more varied origin stories and backgrounds. The next wave

of superhumans were largely alien: the largely-human-looking Inhumans, the Kree hero Captain Marvel and the cosmic wave riding Silver Surfer.

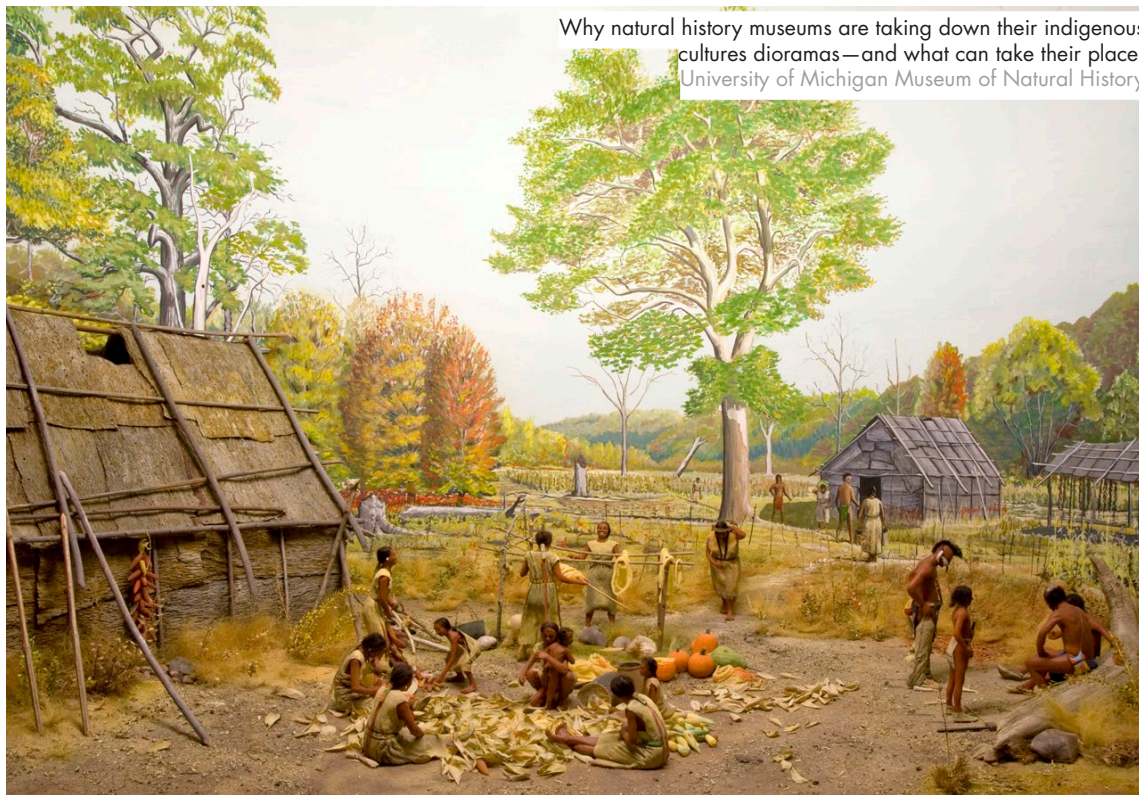
But the final end-point of the Atomic Era for Marvel was 1982's *The Death of Captain Marvel*. The hero, a member of the Kree alien race, had faced down cosmic baddy after cosmic baddy. But what finally did him in was the unseen enemy: a cancerous growth owing to years of exposure to cosmic radiation. There for the Captain's final moments were many of the same heroes who had benefitted from their own exposure to radiation. There, present at his bedside in his final moments, are *The Incredible Hulk* and *The Amazing Spider-Man*, two heroes whose lives were radically transformed by radiation. Both would later suffer the consequences of their mutation: the Hulk's wife died after years of radioactive exposure from him and Spider-Man's child was stillborn after a series of pregnancy abnormalities. Radiation was a destructive force, able to fell the mightiest of heroes.

The Atomic Era of Marvel Comic dies with the Captain. Much of the decade after the 1982 publication of the graphic novel was spent in fear of the final confrontation between the United States and the Soviet Union.

The nuclear monsters of this era became smaller, the transformations more personal. When the company introduced superheroes again, they made the horror of metamorphosis more intimate.

New origins would arise in the times after that narrow window, going beyond the atomic era and into the space race and beyond. But the revived run of Marvel heroes solidified the concerns of the time, reflecting the power of the atom. And, in the way only comics can do, dramatized the need for survivors of the Atomic Age not only to survive, but to live on, more powerful than before.





# The Passing of the Indians Behind Glass

by France Diep

Late fall is Indian history season, Veronica Pasfield says knowingly. In the run-up to Thanksgiving, public schools always teach kids about Native Americans. In November 2001, Pasfield's son's third-grade class in Ann Arbor, Michigan, started a unit about a Great Lakes people called the Potawatomi. They visited the Great Lakes Indians dioramas in what was then called the Exhibit Museum of Natural History in Ann Arbor for their final activity.

Afterward, the boy illustrated the cover of his folder that contained all the worksheets from his unit on the Potawatomi Indians. He drew three deep graves with skeletons at the bottom and tombstones that said "R.I.P."

"This was devastating to me as a mother," Pasfield says, "because my son is an enrolled tribal member." The family belongs to the Bay Mills Indian Community. They are also Anishinabe, a

grouping that includes the Potawatomi. "He has been ritualized properly for his age. He has been a participant in ceremony his entire life." They had taken him to language classes. He had helped build a community canoe. Yet something about seeing the Exhibit Museum's wall of glassed-in, miniature Great Lakes dioramas made him think of death.

He wasn't alone. Shannon Martin, who is also Anishinabe, explains how she felt as a kid, when she saw American Indian exhibits in natural history museums: "It sounded like we were an ancient people and that we didn't exist anymore."

Pasfield talked with other parents, both Native and non-Native, and found many of their kids had similar misconceptions after their field trip. So she took her son's drawing to museum staff, starting a years-long campaign to get the museum to remove the dioramas from display.

It turned out that the Exhibit Museum, re-named the University of Michigan Museum of Natural History in 2011, was one of the last to do so. Dioramas of indigenous cultures have been disappearing from natural history museums worldwide since the 1990s. That decade saw the shuttering of indigenous dioramas in the Cranbrook Institute of Science in Bloomfield Hills, Michigan. In the South African Museum in Cape Town, staff covered their famed Bushmen diorama with plywood and refused to show it even to a museum studies researcher and his class when they visited, says Amy Harris, director of the University of Michigan's museum. The Smithsonian Institution took down their dioramas in 2002.

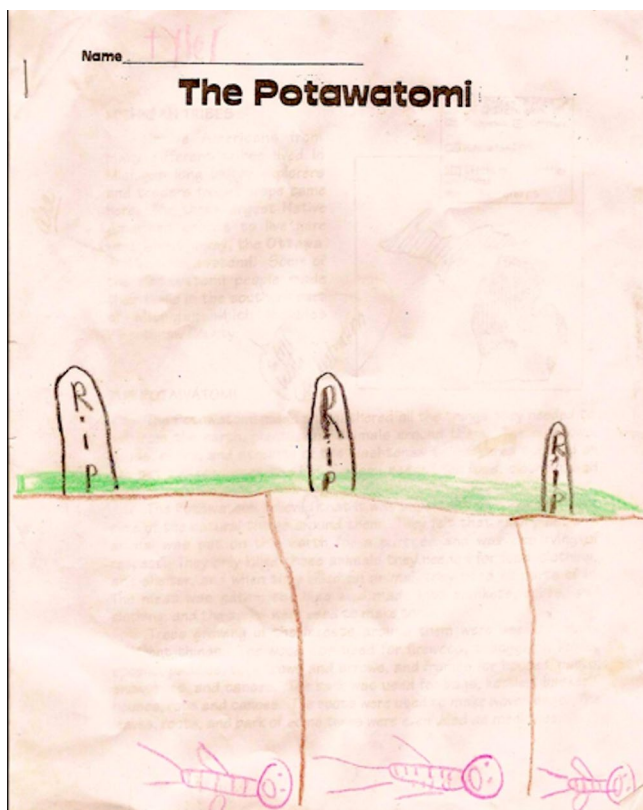
Visitors and museum staff say that by displaying American Indian cultures alongside dinosaur fossils, gemstones and taxidermied animals, dioramas make their subjects seem less than fully human. And because they depict a culture in a freeze-frame moment in time—often during the seventeenth century, around when many tribes first contacted Europeans—they make children think that all the American Indians are dead.

But what also disappears with the people and scenes behind the glass? “Dioramas are a very, very powerful mode of representation,” says Raymond Silverman, director of museum studies at the University of Michigan. Dioramas are fully realized, crafted worlds. They’re full of details, rendered in 3-D better than any movie. “They force one to look closely, especially in miniature,” Silverman says. “Imagine an entire village scene in 100 cubic inches.” Dioramas draw viewers in, inviting them to look for the exact same things that people seek in any new situation. Who’s talking to whom? What are they doing there? Who do I think could be my friend?

At their best, dioramas are like time travel. And some say there might just be a way to replace them, responsibly, before they are as lost as the worlds they claimed to portray.



To understand dioramas’ future, we need to understand their past. How did dinosaur fossils, gems and minerals, taxidermied wildlife and in-



Third-grader Tyler's drawing for his Indian history unit.  
Veronica Pasfield

digenous people all end up in the same museums in the first place? More than unconscious bias mixes American Indians with apatosaurs.

Unlike the displays at the Exhibit Museum, most dioramas were created between the 1890s and the 1930s. Some museums, such as The Field Museum in Chicago, took in dioramas that had been shown in the popular World Expos. Before photographs, films, and cross-country family vacations were common, dioramas allowed museums to show people faraway places. At the American Museum of Natural History in New York, curators commissioned their animal dioramas out of a growing fear that America's natural lands were being destroyed. They wanted people to see and appreciate those habitats before they disappeared. “Railroads were opening up the country at this time, the great western frontier was disappearing, the vast bison herds were vanishing,” an AMNH senior project manager recently said in a museum-produced podcast. “So the scientists

and curators in science museums that were concerned about vanishing wilderness and wildlife were looking for some medium to tell the story.”

Scientists of the time had similar worries about American Indian people. Before and during the turn of the twentieth century, the U.S. government was often at war with different American tribes and federal policies worked to stifle American Indian cultures. In 1879, the government-funded Carlisle Indian School opened in Pennsylvania. With the stated goal “to kill the Indian, and save the man,” the boarding school forbade its young students from speaking their native languages. It forced them to attend church and wear European clothes. Carlisle students were abusively, physically punished for infractions. Over the next two decades, the U.S. government opened as many as 100 similar boarding schools across the nation. Carlisle processed more than 8,000 American Indian children; its counterparts accounted for tens of thousands more.

In 1887, the Dawes Act forced individual land ownership on American Indian adults to further their assimilation and to open up “extra” land to white settlers. The new landowners were expected to farm, whether or not they came from farming cultures and in spite of the fact that the land they were given was often in deserts.

Under these pressures, and as more and more people died in wars or of disease, the survivors began abandoning villages. Anthropologists raced to collect the things they left behind. “Our stuff was being scooped up right and left,” says Anishinabe member Shannon Martin, who directs the Ziiibiwing Center, an Anishinabe cultural museum in Mt. Pleasant, Michigan.

Anthropologists were suddenly seeing a supposed need for “collecting the remnants of the ‘vanishing race,’” says fellow Anishinabe member Pasfield, who finished her doctorate in American studies at the University of Michigan last year. The 1893 Columbian World Expo in Chicago included an American Indian village display to show visitors an “almost extinct civilization, if civilization it is to be called,” as one guidebook explained.

‘Ziiibiwing’: ‘By the river’ in Anishinabe.

The expo hired people to wear traditional clothes that tribes had abandoned three or four generations ago. While the U.S. government worked to erase American Indian cultures, American museums tried to store them safely under glass: in natural history museums like fossils, in dioramas like dinosaurs.

“Dioramas hold up a mirror to their creators more than portray some kind of reality,” Pasfield says.

Of course, modern visitors of natural history museums don’t go in with these ideas in mind. But the stamp of injustice still lingers in the displays. These beautiful, 50- or 100-year-old dioramas are a holdover—and a subconscious reminder—of some of the worst moments in U.S. history.



At first, museum director Harris did everything she could to keep the University of Michigan’s Great Lakes dioramas. She and her staff rewrote their labels. “That took a long time,” she acknowledges. She convened an advisory board that included Native people. She hired a consultant from the Smithsonian’s National Museum of the American Indian in Washington, D.C. She worked with tribal members to develop an improved elementary school history program. She tried adding a display about contemporary Great Lakes culture, showing modern powwows, to address criticisms that dioramas only showed the past. “Even after that, we still got complaints.” The dioramas were so compelling they seemed to overpower whatever modern displays she created.

In the end, she realized they had to come down. She announced the anticipated change in September 2009 with press releases and a short video that aired on the local news. For a semester, the museum showed a “Native American Dioramas in Transition” display to explain Harris’s decision. Then, in January 2010, museum staff carried the dioramas down into the museum’s basement. They had been a part of the institution since the 1950s.

When they were on display, the dioramas were a series of fourteen miniature boxed scenes, each about the size of a large television. The scenes showed tiny figurines of Great Lakes and other



American Indian people cooking around a fire, putting up a teepee in a snowy wood, and kneeling on staked-out leather hides to scrape and cure them. A baby napped inside a carrier patterned with blue and red flowers. One woman brushed her hair away from her shoulder with her hand, some strands tangling in her fingers.

The dioramas were arrayed in two long rows, stacked on top of each other. Each was lit from the inside; collectively, they glowed a faint green from all of the trees and grass depicted in the scenes. From a distance, they looked a little like a wall of tanks in the fish section of a pet store.

Museum staff say they were beloved by Ann Arbor residents, second only to the dinosaurs in popularity. When they were taken down, “the majority of our visitors were really unhappy,” Harris says.

“It saddens me greatly that we would not have these dioramas anymore,” Ann Brill, a fourth-grade teacher in Dexter, Michigan, wrote in a comment to the museum. University of Michigan archaeologist Lisa Young scanned and shared the comments over email. “We cannot take our students back into time to experience firsthand the life of our country’s natives; ... the dioramas offer a wonderful visual aid,” Brill wrote.

“No museum director ever wants to do anything that makes the majority of museum visitors unhappy,” Amy Harris says. But she takes full responsibility for her decision: “I think it was the right one.” Veronica Pasfield was pleased with Harris’s response. What used to be the museum’s Great Lakes hall now holds an exhibit of large mineral samples.



Yet some museum staff members say that ordinary displays of artifacts cannot fully replace dioramas. Dioramas show objects in action—a basket on a shelf doesn’t tell a museum visitor as much as a basket being carried by a person, a basket being filled with wild rice gathered on the shore of Lake Superior, or a basket getting woven in a home.

Dioramas are created with a seemingly bygone level of care and attention, fitting for a craft more



University of Michigan Museum of Natural History

than 100 years old. Every last minuscule detail, from baby blanket to braided pigtail, is handmade. Robert Butsch, a zoologist who worked at the University of Michigan Museum of Natural History for 32 years starting in 1954, created their dioramas. At the time of his death in 2006 at age 91, he was working on a Pennsylvania coal forest scene for the museum. In an age when children and adults spend so much time looking at images and videos online, it still gives people pause to see Butsch’s handiwork.

At least one Native American visitor agreed, writing in to protest the dioramas’ removal: “My name is Joseph [Last name redacted by Young]. Oglala Lakota pipe carrier, sun-dancer, Holy man, and singer. I have enjoyed these dioramas with my children for many years ... Truly it idealizes a way of life we will never have again.”



Elsewhere, however, more respectful ways of visualizing the indigenous past have developed.

In the northwestern-most corner of the contiguous United States, on the Olympic Peninsula of Washington state, the land meets the Pacific Ocean on cold, yellow, scrubby beaches, where evergreens grow almost right out to the salt water. Before they met Europeans, the Makah tribe lived



Washington State University archaeologist Richard Daugherty examines an artifact found at the Ozette Village archaeological site, Neah Bay, Washington.

Photo courtesy Harvey Rice/Washington State University

here for more than 3,800 years, plying the rough ocean in canoes carved from Western red cedar. They fished and hunted porpoises, seals and several species of whales. They carved small canoes for kids to practice navigating.

In the winter of 1969-1970, hikers visited the beach here after a storm had washed some of the beach mud out to sea. They discovered the erosion had exposed some long-buried wooden artifacts. One hiker called the Makah Nation and Makah officials called Washington State University in Pullman. In April, university archaeologists began excavating the site by washing away the mud with seawater.

Makah oral tradition had long talked about an ancient “Great Slide” that buried a part of one of their villages. This was the buried section. It was a part of Ozette Village, in which people lived until 1917, when families left for the town of Neah Bay so they could send their children to school, as required by U.S. regulations.

Archaeologists determined the buried Ozette artifacts were about 500 years old, dating from before European contact with the Makah people. Over eleven years, the archaeology team unearthed six longhouses, 60-foot-long cedar buildings where many generations of one family lived. Inside and around the longhouses were 55,000 artifacts: bits of everyday life, from wooden bowls to colorful baskets to one carved wooden whale dorsal fin decorated with 700 evenly-spaced otter teeth, the purpose of which is still unknown.

The Makah Tribal Council decided to create a cultural center to care for and display these artifacts. The center would be more than a museum; it would also house the basket weaving and language classes that had previously been scattered throughout the reservation. Council members met with an exhibit design company from Victoria, Canada, and

It seems several people noticed the newly exposed artifacts. One man called the then-tribal chairman to report looting at the site.

in 1979, they opened the Makah Cultural and Research Center at Neah Bay.

The center was one of dozens of Native-run cultural museums that opened in the Americas that decade. Most non-tribal anthropology museums, however, continued to use the traditional dioramas. The Smithsonian Institution's National Museum of Natural History kept 1950s and 1960s-era Native American exhibits until the early 1990s, when museum staff, for the first time, asked Native artists to write and record explanations of the Seminole textiles and Mohawk baskets the museum had on display. At that time, the tides began turning for how museums showed Native culture and history. One major signal of change was the 1990 passage of the Native American Graves Protection and Repatriation Act, which compelled museums and federal agencies to let tribes know if their collections held tribal items.

First Nations-run museums continued to open throughout the 1980s and 1990s. Now there are about 200 of them in the U.S., Canada and Mexico.

The Makah Nation may have been among the first to display their own cultural objects, but Janine Bowechop, executive director of the cultural center, says they never considered anything else. "We would never give this collection away," she says. "This collection is really a treasure of our tribe. They were made by Makah people. They were excavated from Makah territory. We've done a great job in taking care of the collection and in using it to interpret culture, to preserve culture."

When visitors walk into the museum portion of the center, one of the first things they see is an eight-foot-long scale model of the buried village. Though it includes tiny people, hali-but drying on racks, and canoes on the beach, Bowechop says it's a scale model, not a diorama. "It helps people understand the layout of the village," she says.

After the scale model, the museum takes visitors through what pre-contact Makah peo-

Bianca Message, president of André & Associates Interpretation and Design Ltd., told me this story about working on the Makah Cultural and Research Center:

The Great Slide didn't happen to bury any canoes, but the council knew Makah people had used canoes in that time period, so they carved new ones to go into the museum. Message's father saw the new canoes and tried to tell Greg Arnold, a Makah council member and André & Associates' primary contact, that the carvers should add a patina to the canoes so they would look old. Arnold agreed.

Later, Message's father returned to find an excellent-looking patina on the canoes. How did the Makah do it? "Greg said, 'I paddled the canoes up to Canada to see our relatives and back so they would earn the right to be in our cultural center,'" Message recalled. "The integrity and the pride of the Makah was just superb."



ple did from season to season. The first displays show artifacts related to springtime and the whale hunt. There's an actual diorama, showing taxidermied Steller sea lions, that's mostly notable for its flood of lighting in a museum typically kept a bit dimmer than most to protect the 500-year-old objects on display. Fishing and seal hunting shade into summer. Next come cases with tools and art made and used in the fall and winter. The museum uses text panels and photographs to show how the artifacts were used. There are two recently carved canoes with paddles and tools inside, which visitors can pick up. Kids who visit can make their own paddles to take home.

What the displays lack are full-sized Indian mannequins. "It was deliberate not to have mannequins," says Jean Jacques André, founder of André & Associates, the design company that worked with the Makah Tribal Council. "It was out of the question to single out a person or persons to represent their ancestor."

Bowechop, who was a teenager when the center opened, says she's glad her predecessors made that choice. She doesn't like "these orange-looking Indians in the displays."

One of the Makah Center's highlights is the full-size replica of a longhouse that visitors can go inside and explore. Cracks in the roof let in light and let out smoke. It's dim inside, just as pre-contact longhouses were. Fire pits are located just where

they were in the buried structures. "It's turned out that it's a really nice feature because so many of our artifacts are behind glass," Bowechop says. "When you have an exhibit that you can walk inside, it really helps people understand what life was like."



Although many tribal museums and their counterparts now avoid dioramas altogether, re-envisioned cultural exhibits like those at the Makah Center live on in many institutions. Life-sized, walk-in structures appear in The Field Museum in Chicago and the Ziibiwing Center in Mt. Pleasant, Michigan. The structures bring objects to life in a way that usual displays can't, by taking things off museum shelves and tucking them just where they would be stored in a house. The walk-in displays replace some of the functions of older dioramas.

Ziibiwing Center leaders discussed dioramas extensively before they opened in 2004. They settled instead on more open displays, populated with life-sized mannequins that can be updated as Anishinabe culture changes. The displays are spread along the sides of the main, curving pathway where visitors walk. They show pre-contact Anishinabe people and Anishinabe activities through the seasons. Photographs and artifacts show the colonization of Anishinabe land by white Americans, while modern Anishinabe-made artwork show the tribe's current culture. None of the mannequins are inside glass cases. "We wanted to stay away from the whole idea of Indians behind glass," says Martin, the center's director.

The mannequins are all modeled after Anishinabe people living in the U.S. today. "We had kind of a casting call for our tribal community," Martin says. "The mannequins are real tribal member



A diorama at the Ziibiwing Center of Anishinabe Culture and Lifeways.  
Ziibiwing Center

"We don't have dioramas," Kathleen Ash-Milby, a curator at the National Museum of the American Indian in New York City, says flatly. The museum stays away from dioramas because they are associated with natural history museums' portrayal of indigenous cultures, she says. And they make the people they portray look like "exotic stuff behind glass." The National Museum doesn't use mannequins, either.

likenesses, individuals who volunteered to come in to get headshots and get measured.” They are rendered in a terra-cotta monochrome. Their stylized hue helped the center avoid representing skin color—the issue that unsettled Bowechop, the executive director of the Makah Center.

Tribal members voiced all the recordings in the museum. Modern tribal artisans made all the clothes the mannequins wear and reproduced sacred objects that can’t be shown publicly, such as religious scrolls. The rest of the objects shown are authentic. In a walk-in lodge display, hidden smoked hide and cedar oil diffusers even give the building the right smell.

Yet in spite of all the thought and effort that have gone into American Indian dioramas since the 1980s and 1990s, there is no consensus about what works best. Bowechop dislikes full-sized mannequins and emphasized that the Makah Center doesn’t use any. Some critics of the University of Michigan displays thought miniaturization was problematic because it trivialized American Indians.

These disagreements arise because dioramas aren’t the soul of the problem. The problem is the culture that put American Indians in dioramas in the first place—in natural history museums, alongside the dinosaurs, in these sometimes-beautiful, contained worlds meant to record what the assumed viewer’s ancestors had wiped out. Different museums and cultural centers try to move away and move on from that history in different ways.

Moving on doesn’t mean forgetting, however. Displays such as modified dioramas and walk-in buildings maintain the older dioramas’ power to capture the imagination and show what life was like in the past. For scholars who want to see and think about how we used to display American Indian cultures, the University of Michigan’s Great Lakes dioramas are available for academic study in the basement of the building.

Some of the skills behind diorama-making also live on. Besides its sea lion scene, the Makah Center has one other display that Bowechop calls a diorama. At the end of the longhouse, a door-

way opens out onto a painted background of the Pacific Ocean. Sculpted seagulls hang overhead on translucent wires. It’s meant to give visitors a sense of what it was like to live on the edge of the open ocean, something they cannot see where most Makah people live today. Neah Bay, where Makah villagers retreated when told to send their children to school, sits on the Strait of Juan de Fuca, not the open Pacific. For non-Makah visitors, it is a diorama in which the viewer doesn’t examine the Indian under glass, but takes her place.

For the Makah, it’s a window to what their ancestors called home.



## The Nebulous and the Infinitesimal: A Conversation between D. Graham Burnett and David Gissen

Charged to think about “The Nebulous and the Infinitesimal” in the world of made things for a day-long symposium on the future of architecture, the theorist-historians David Gissen and D. Graham Burnett launched a real-time game of TTT (Thought-Thing Tag), trading the lead in a series of improvisational meditation-vignettes. Each cameo was intended to epitomize the inosculation of ideas and objects. Peruse this lightly edited transcript of their exchanges, and see how you think they did. If it is a series, what should come next?





D. Graham Burnett

In the 1927 edition of *Paterson*, William Carlos Williams delivered himself of that great admonition to the metaphysically inclined: “No ideas but in things.” His warning weighs on our theoretical aspirations. And so, for this conversation, David and I have decided that we will try to move under, or perhaps out from under, the spell of this materialist mantra. We are going to get to ideas, if we get to ideas, only from things. The format? Tag team. I’ll go first, and talk about a thing that seems germane or otherwise moved my spirit in connection with our assigned topic, “the nebulous and the infinitesimal,” and then at some point, I will “tag” David and he will do the same. After a few of these iterations, we’ll see where we come out. I certainly won’t try here to set up any theoretical grounding for such a performance, since that would seem rather to foreclose on the whole idea. But suffice it to say that there is a theory sniffing around down there somewhere, and we’ll see if we flush it in the next forty minutes.

I begin with the magic of plumbing, and thereby draw your attention to what I will argue is the architectural instantiation of concern for the infinitesimal at its most numinous and uncanny. Every Catholic church, both now and basically since the fourth century A.D., contains within it a very peculiar apparatus which is called the *piscina*, or sometimes the *sacrarium*. It’s a small sink, now generally located in the vesting rooms where the priest and the altar boys prepare themselves for Mass. It looks like an ordinary sink except that it is covered with a lid and is usually kept under lock and key. The *piscina* was developed as a feature of the architecture of the Christian church in almost direct connection to the formalization of the doctrine of the “real presence” in the Eucharist.

One of the basic problems of thought is the relationship between immanence and transcendence. Catholicism concentrates this conundrum in the doctrine of transubstantiation, which sets out to explain how what appears to be an unleavened wheat wafer could, in fact, be the “real presence” of Christ. The *real* presence—so that the words “this is my body,” said at the consecration, are not understood metaphorically but rather literally. Though what it means to be “literal” in this context, when the properties of that wafer remain



John Sell Cotman, “A Piscina in Blickling Church, Norfolk,” 1814, watercolor and graphite.  
[Wikimedia Commons](#)

constant—that is, when the sensory information you might derive from that object seems to indicate that it remains an unleavened wafer—has been a main driver of some of the most sophisticated philosophical work to be done in the last two thousand years. Without reprising the full history and legacy of the Fourth Lateran Council (which is anyway beyond my ability), we can simply note here that for Catholics this doctrine is a core orthodoxy of the faith and not a free topic of dispute. It is also, despite the recondite character of the technical theology, a gateway to some perfectly concrete and terrifying problems of the infinitesimal.

So, if I’ve just said the Mass and I’ve consecrated the Eucharist, I’ve touched the Eucharist. I presumably have, on my fingers, some very small particles of the Eucharist—and those particles are, in fact, particles of God, in a non-metaphorical way. This fact raised, from very early on, cataclysmic problems of disposal. How do I wash under those conditions? How would I wash anything that came into contact with such a holy thing?

The *sacrarium* is the solution. It is a sink, which, from its earliest introduction in churches (probably as a *detournement* on a traditional baptismal font), was piped into sacred ground, directly. Its conduit leads down to a kind of sepulchral space deemed suitable to the disposition of divine residue. There are some that were piped out to the sacred ground of the graveyard and there vented. As time proceeded, there were more of them built, in a sense, *over* a sepulcher—a final drywell that was under the foundations of a church.

What can and can't go into a *piscina*, and under what circumstances, is, again, a nice theological question. But I want to leave you, for starters, with the *piscina* as an object, and ask you to reflect on it in its peculiar historicity: Across most of the Middle Ages—in fact, from the fall of Rome to the rise of modern systems of sewage—indoor plumbing was effectively unknown in Western Europe as a means of sanitary evacuation. So I put to you a counter-intuitive observation: plumbing was preserved across roughly one thousand seven hundred years of Western history, not as a mechanism of cloacal disposal, but rather as a mechanism of

sacred preservation.

Tag.

David Gissen

So, trying to focus on things, and continuing to talk about drainage, I'd like to discuss a thing that speaks to a lack of drainage—puddles. I suppose I'm cheating because I'm talking about a thing—a puddle—but I'm going to provide a few examples of this thing and its role within the history of architecture. While I was putting together the book, *Subnature*, I kept thinking about how to talk about these types of things that are infinitesimal and nebulous—how to write about things like puddles or dust. It's not easy.

When you think of images about drainage, particularly in the history of modern architecture and cities, you often think of images that speak to an optimization of the city's flows. For example, the famous sections of Pierre Patte, or the underground, dimly lit photos of the sewers built by Baron Georges Haussmann, both of which influenced Le Corbusier so much. But in addition to images that emphasize conduits and flows, we also see a series of images that position stagnancies—the lack of drainage—as theory. These puddles—which is basically what they are—emerge as interesting sites of stagnancy and stillness, and they literally conjure up additional images within their stagnant surfaces. There are two images that were made at roughly the same time, that I think present some new, less instrumental, ways to think about drainage, and that suggest how the image of drainage—literally, the water that's released off buildings—might somehow figure within the discourse of architectural history.

Here, we have two images: The first, made in 1964 by Michael Carapetian, is of the Economist Plaza; the second image, of the Bauhaus, was made roughly at the same time by Leonardo Benevelo, an Italian architectural historian. Both photographs show a puddle in front of these buildings. One imagines this puddle formed either by the ablutions of the buildings surrounding them or some defect of drainage within the plaza or street. Leonardo Benevelo reproduced his photograph of the Bauhaus with its failed, existing drainage in his *History of Modern Architecture*, and Michael Cara-



petian's picture became the dominant image of the Economist Plaza. You've probably seen it: There's a man with a bowler hat, who's actually stepping into a puddle and it's foggy, rainy, and wet. I'm completely fascinated by these images that position the puddle as a type of *punctum* that breaks through various modern historical narratives.

When I talked to Michael about why he made that photograph, he said he was really dismayed by the perfect settings one sees within urban architectural photography—its dominant image of the fixed, cloudless and bright sky. It makes the urban setting of a building akin to the staged lighting one achieves in a photographers studio—where one photographs an architectural model, for example. He wanted to use the puddle—and the wetness and fogginess that pervades his photo—to give the image a notion of realism within the context of the city; the puddle was somehow the *Real* in relation to the way the city is seen and experienced. But he also wanted to make a gesture toward the Smithsons' own efforts within that particular building. The Economist Plaza is an early project in which the architects make the language of modern architecture an extension of the historical fabric of the city.

Leonardo Benevelo used the puddle to recast historically significant buildings as occupying our time—not as sacred objects in a book or as one of many modern and completely mediated structures (in the ways described by Beatriz Colomina, for example). The puddle enabled him to depict the building as being simultaneously within and outside the platforms of architectural mediation. It's still within media, because it appears in a photograph in a book; but it offers a fleeting glimpse of something somewhere—besides the pages of a history book—without offering up a sentimental image of locale and place specificity. So in both ways, a puddle is one of many possible unsentimental indexes of site and realism within architectural history and in its photographic depictions. Tag.

#### D. Graham Burnett

I'm going to talk about water too, and the relationship between water and built spaces. I'm going to talk about an *elevator* that linked sea and land—a mechanical hinge between the waterworld and a

flooded building. In the mid 1950s, the neurophysiologist John Cunningham Lilly began running some experiments on a bottlenose dolphin, *Tursiops truncatus*. In the course of these experiments, Lilly came to believe that the dolphin was trying to communicate with him. So he sat down and wrote a set of grant applications to the Office of Naval Research, NASA, and other government agencies to support a dolphin research program. He put the dolphin forward as a very promising model organism for thinking through how we would “break through” to a non-human species—i.e., extraterrestrials.

It might be surprising to us now, but this flew, and he raised enough money to build a dedicated laboratory in the U.S. Virgin Islands, which he called the Communications Research Institute (CRI). Across the period from 1961 to 1965, he undertook, in this space and on government contracts, a set of experiments with cetaceans, testing both their communicative abilities and concurrently examining their capacity for echolocation, sound fixing and ranging, and other things that interested the Navy.

Meanwhile, Lilly was tuning in, turning on and dropping out in a Leary-esque way. He had first made use of LSD in connection with experiments in veterans' hospitals to increase the sensitive responsiveness of patients undergoing psychotherapy, and he came to believe that LSD was a very powerful psychotropic agent for enhancing communicative possibilities between subjects. It was also good for breaking recalcitrant (read “enemy”) agents; the CIA experimented with the drug in that capacity in those years. Lilly thus came to believe that it might also be good for commensurating a researcher with his experimental subject. To that end he combined LSD with another bit of Cold War techno-science that was about to make the same transit across from the military industrial complex to the swampy territory of the counter-culture: the isolation tank, the use of which Lilly had pioneered at the National Institute of Mental Health. One of the main questions of this period, as far as the Cold War sciences were concerned, was “what would happen to a subject absent from any sensory input for a long period of time?” Lilly worked on this problem as part of a larger project to break into, or, indeed, possibly just to break,



an enemy agent (and/or an alternate intelligence). But the weird thing was, he came to find that in those spaces he felt really *good* and really *strange*. Especially listening to stereo headphones. He began to figure this must be something like the *Umwelt* of the dolphin, our aquatic familiar. So Lilly hung in the isolation tank at CRI, wired up to the dolphin tank, and he tripped.

In the incandescent endgame of this story, Lilly wanted to meet the dolphins in their own world. So he arranged for his laboratory to be cantilevered over the dolphin pools, and he flooded his working space to make it dolphin friendly. A sling-like elevator dipped down into the holding pond, and lifted the dolphins into the lab space, where they could flop along in the shallows of a shared dolphin-human domesticity. The plan was to have the elevator operated by the dolphins themselves, but this never worked out. The Navy got wind of the weirdness and pulled the plug.

The dolphin elevator: I think of it as a kind of stent, holding open that occluded and nebulous passage that links nature and culture, science and fantasy, human and animal, inner space and outer space, mind and madness.

Yes, Lilly was a consultant on the movie *Flipper*. Tag.

## David Gissen

We'll continue to talk about architectural technology, and my thing will be the Ford Foundation atrium garden, which is something that interests me quite a bit. The Ford Foundation building was designed by Roche Dinkeloo Architects in the late 1960s. Have you been to this room in New York City? It's a semi-public atrium space filled with plants and greenery. Kevin Roche and John Dinkeloo proposed this atrium space in their initial design and asked the landscape architect, Dan Kiley, to design it. No one had grown a landscape quite like this inside an office building before.

This was during the rise of the climate-cooled "HVAC'd" building (heating, ventilation, air-conditioning). This type of climate engineering was built into virtually every office building in New York City, and standardized through protocols like "the comfort zone"—that is, the idea that every worker in the office will have a 70 degree and 50% humidity environment. Kiley was brought into this context and said, 'let's grow a forest within the space. But since the comfort zone in this building is fundamentally about providing a comfortable, functioning environment for a human being, how do I think of the comfort zone as a context or an environment for plant life?' To understand what this could be and how it might work, Kiley turned to a Dutch colonial botanist named Fritz Went, who studied plant life in a space he called a phytotron, a facility in which he examined the growth of plants and made idealized atmospheres of urban and non-urban contexts; for example, he studied the ideal temperature, humidity and artificial sunlight conditions for tomatoes. Went believed that if you standardized the environment for a plant, you could standardize the plant! Kiley was very influenced by Went's exceedingly mechanical vision of biology, but where Went began with the plant, Kiley essentially reversed the process. Given an environment—the office building's comfort zone—Kiley's task was to assess the possibilities for life within it. Kiley reasoned that the 70 degree and 50% humidity environment was like the Virginia Shenandoah landscape. He assumed that the same kind of plants would grow in the atrium. As a result, a lot of the initial species of plants he introduced, such as maples and oaks, were from the Shenandoah Valley area.



The atrium garden of the Ford Foundation building, designed by Dan Kiley.

Photograph copyright David Leventi, 2013

Well, the trees died. Not only did they suffer from the bits of pollution that made their way into the HVAC system (no HVAC system can be completely removed of pollution), but they experienced enormous climate stress. While Kiley discovered that interior, architectural environments can be interpreted as a representation of some place—a fascinating observation of the comfort zone—he incorrectly identified the comfort zone’s representational analog. What the landscape technicians who maintained the plants ultimately realized was that the temperature and ventilation conditions in the building were essentially tropical. So, they removed all the American woodland trees and replaced them with tropical trees that were grown and cut to look like the original species. When you visit the Ford Foundation today, almost all the species (*figus*, et cetera) look like the plants of the Shenandoah Valley. It’s a very WASP-y organization, so they weren’t going to give up on Virginia as their ultimate reference.

I think Kiley’s innovation was to understand this air around us, in this room right now, as a representation—which also suggests that the air in this room is a thing. A much more important theorist of environment—Reyner Banham—regarded HVAC as either an assemblage of instrumental gadgets or as a counter-environment situated within and through technology. In the Ford Foundation garden, we see technology and the environment itself as having a representational, and frankly, monumental, character. What I find inspiring is that the environment within architecture, made by architecture, can have a monumental quality that is exhilarating in some ways, and makes us think about the environment very differently from the ways that we generally do: It becomes a form versus a mechanism or a flow. Tag.

D. Graham Burnett

Should we do two more? Two more?

David Gissen

Okay, yeah.

D. Graham Burnett

In 1958, Vannevar Bush, who was, at that point, probably the most powerful scientist in the world (having played a leading role in the Manhattan Project, and having been central to the reorgani-

zation of the American science and engineering community across the Second World War), turned his attention to a most improbable device. This was a person who had, at his command, the entire resources of science and technology as they were then practiced in the United States. And he set his mind on the microtome. A microtome is just what its etymology would suggest: a thin-cutter. It’s the basic tool of a pathological anatomy lab: a salami slicer on a tiny, tiny scale.

Let’s say you want to look at things that aren’t transparent naturally, using transmitted light—in other words, you don’t want to try to shine light on them and have that light reflect back up the microscope’s tube, but rather want to be able to put light directly below the stage of the microscope and illuminate them *filmically*, which is much more efficient, especially when you start to have compound microscopes with higher magnification. To do this you have to be able to cut a slice of that solid material thin enough to make it susceptible to the transmission of light in the visible range. So until you have a microtome that allows you to make a microscopically thin shaving of an opaque material, you are limited in the level of magnification you can achieve in looking at a surface.

But this thing has been around for a long time by the 1950s. It isn’t rocket science. Why does Vannevar Bush care? He has a very wacky new idea for a radically novel kind of microtome, which he realizes in prototype, though it never enters large-scale manufacture. So, imagine, if you will, the shutter of a movie camera transformed into something like a blade. And then imagine, cartoonishly, pressing an object, salami slicer-like, against that whirring blade. Imagine each of the shavings that comes off, as that blade whirrs, being immediately applied and fixed to a piece of 35mm film running through the device.

What you could do, then, is take a tidbit, say, the heart of a mouse, embed it in paraffin, set on the stage of the microtome, and press a button. What would ribbon out is a strip of 35mm film, each frame of which is a sectional thickness of that mouse heart, each no thicker than a single cell.

So what you have here, I would argue, is something like the reification of our desire to experi-

ence a world liberated from matter—Bush’s “automatic” microtome had the power to convert all solid things into a receding dance of diaphanous veils. The ostensible advantages of the device were that it enabled you to print off a set of these images for demonstration purposes using the same technologies that you’d use for copying a film—so you could transfer directly from the real to the photo-realistic via simple projection. It also allowed you (in principle) to do histological stains using the same techniques used for the development and fixing of emulsions in filmic processes. But, given that the device met no actual need in the period and was eventually abandoned, I think it’s more interesting to understand it as a very peculiar robotic reification of a perennial visual fantasy: the flight of the eye through solid things. Tag.

David Gissen

So we’re supposed to be somewhat manifesto-like, right?

D. Graham Burnett

Go.

David Gissen

You talk about linear trajectory of the eye. The next thing I’m going to talk about is related to this. The vector: it’s that thing that instructors of environmental architecture tell you that you have to draw to make a building green or sustainable, but it’s also that thing that you draw to depict any flow in and through a building. In an environmen-

talist context, it shows the air moving in and out of buildings. We can trace vectors to seventeenth century drawings of mechanical objects and their operations. It eventually enters into fluid dynamics. Today, it has become the visual, representative language of the infinitesimal and the nebulous in architecture, right? It becomes the representation of air; it becomes the representation of water; landscape urbanists use it to represent schools of fish. We often represent these things and others as flowing or moving, using the language of vectors. And yet, I want to give a manifesto, in three minutes, against the vector, because I think that the vector ultimately reduces everything to pulse. And while I’m sympathetic to the vision of the world and the city as flow, it is not how I understand myself to experience it. I imagine the environment, again, always as some kind of representative or monumental feature.

When I look at a photograph of the smoke over Pittsburgh from the early twentieth century as an image of air, I don’t think the vector has anything to tell us relative to that image. I think we look at that, we understand that there’s something about the sky over our heads, and we occupy a very different sky when we stand in Pittsburgh today. The air of the past takes on a monumental, representational character. It’s the air of another time. To draw air as vector—or any other “flow”—is to deny that representational possibility of our environment. Within architecture, we don’t have a visual representative language to think about our environment under the historical terms within which we think about the environment every day. When people talk, today, about reducing carbon emissions to their levels of thirty years ago, it’s really a historical argument. If we reproduce the sky over our head, like it was thirty years ago, somehow there will be salvation, right? If we recreate streams, or recreate brownfields, into something that’s green and verdant, we’ll return the earth itself into some pre-industrial, pre-modern form. The vector cannot articulate that historical mentality that lies within our contemporary discussion about environment, nature and change. And so, I would love to see an architecture that deals with the environment, with nature, that can drop the vector, whatever that might look like. Tag.



Pittsburgh’s Bellefield Boiler Plant, also known as the “cloud factory” in Pittsburgh.

Photograph by Joel Strait, November, 2006



#### D. Graham Burnett

I want one more just because of the “sky over our head” line. What I hope is going to happen is that maybe in the closing movements of the conversation now, we might turn a little bit to self-consciousness about what it is to move from objects, to the relationship between sense and signification.

So you’ve got your Platonist readings of the basic pathology of the relationship. You’ve got your hopeful Aristotelian adequation of these registers. And, of course, you have Christian apologetic accounts that spool out across two millennia in both the Platonic and the Aristotelian modes. Some of these tell you that the relationship between the thing I touch or see, and the idea that I form of it, is akin to the miracle of the incarnation (something like the original “transubstantiation”). In my view, that’s a very exciting, Bonaventurian reading of the way matter and spirit could be entailed to each other. Admittedly, for those without an appetite for such things, it’s a pure mystification—even madness. On the other hand, you have stranger, but, in some ways, more easily rehabilitated, accounts that come, in part, out of the anti-iconoclast writings of the early Middle Ages. I’m thinking of [Saint Theodore of Studium]([https://en.wikipedia.org/wiki/theodore\\_the\\_studite](https://en.wikipedia.org/wiki/theodore_the_studite)), for instance, who suggests that what happens in that relationship between the sense of the thing and the making of ideas, isn’t a mystical transmutation of essence, but a kind of “economy” of participation—a redistribution or circulation of a shared element.

This latter sort of argument is what undergirds those theories that tried to protect and defend the power of icons. It’s not, according to this view, that the icon is a fraudulent picture of God (and therefore must be destroyed, since it’s simply a bait for our illusion). It’s rather that God has, in Christ, a kind of circumscribable form, and that the icon participates in that space that can be circumscribed. As a result, a genuine icon circulates within the larger economy of the Divine Being. If we know how to bring ourselves to the icon properly, we can, in fact, participate in the Divinity and there is a kind of exchange between us: a trade, if you like. We are in the “trading zone” of spirit and matter. This story, which is, in its proper philo-

sophical constructions, alien and perhaps rebarbative, nevertheless might be salvageable, in that it seems to promise a way to re-imagine the relationship between thought and matter. In these strange ideas we detect a mighty aspiration: an extravagant, even desperate, desire to overcome the terrible dialectic between ideas and things. To go back to William Carlos Williams: “No ideas, but in things.” But what would that look like? What would it be to have ideas in things? We don’t think things, right?

I can’t resist offering one more real, concrete story that is something more than a metaphor for how the “clouds over our head” (the space of ideas), and the way before us (with its impedimentary objects), could be set into a mutually reflecting and, at the same time, enabling relation.

I need a date again: 1822. The year that saw the publication of William Scoresby’s two-volume *Natural History of the Arctic Regions*. Scoresby was a whaler who spent his life chasing down bowhead whales near Spitsbergen, in the first decades of the nineteenth century. He was also a philosophically-inclined person who didn’t think of himself merely as a grubber in whale oil. To prove his elevated capabilities, and to reflect his admission to the Royal Society, he composed a vast repository of philosophical knowledge about the Arctic, which was one of the main texts upon which Melville drew while writing *Moby-Dick*. Scoresby presented, in a section on navigating pack ice, a fantastic account of how the whalers of Hull learned to find their way as the freezing sea began to close over at the tail end of the season. He described a particular kind of atmospheric condition, which was by no means universal, but was a kind of salvific grace when it obtained. Imagine: you’re in the crow’s nest of a whale boat; you’re trying to find your way out through the Greenland straits before the winter ice packs you in tight enough that you may end up having to walk out (if you’re lucky). And the question is, how should you navigate through what is a shifting maze of block ice ahead of you? You can only get up so high; maybe you can see a dozen miles from the crow’s nest to the horizon. How do you see beyond the horizon line? In the atmospheric condition that Scoresby could not explain, but which he had himself experienced (and which Melville, too, talks about as

“looming”) the reflected light under the cloudy sky could actually throw up onto the underside of the clouds a nebulous and difficult-to-read, but nevertheless legible, *reverse image of the patterns of pack ice beyond the horizon.*

David Gissen

A representation.

D. Graham Burnett

Right. So you're looking up, and what you're seeing is, if you know how to read it, a pattern of what's below, what's *ahead*. And that was how they found their way out, when the meteorological graces permitted. It's a version of “looking up to see down” that seems promising, at least metaphorically, as we to try to think through this business of thoughts and things. Do we immolate objects into the sweet smoke of their meanings? And if not, how do we keep them present as the sacrificial fires of signification are lit? Part of the game here, in this conversation, was to erect an ekphrastic cabinet of curiosities. Should we get wood, put it on the altar? Say what we mean?

David Gissen

What interests me about that is that one of the ways that architects in the last ten years, in particular, have transmitted their interpretations, their aesthetic sense of objects and things, has been through history. History has played a very vital role within our profession. It's one of the sites in which we can witness a kind of vanguard thinking about architecture. So now that we have all this truly enormous historical knowledge, what

do we do with it? We've been warned, those of us who have been trained in this discipline, that we should not instrumentalize our history, which is to say, simply, that you shouldn't make buildings by approaching historical assessments as scripts for future works. Nonetheless, this historical mentality is everywhere, in terms of the writing in architecture, right now. One of the things I'd like to suggest is that our largely historical mentality, within which we see, may begin to re-inform the object itself. But in informing objects, I'm not imagining an instrumental relation between object and text. Rather, I want to imagine an object that takes on a historical character—but in a way quite different than, let's say, a nineteenth-century historicist building.

Here I'm going to bring up some specific examples: if you look at the work of Philippe Rahm, a Swiss architect who reconstructs historical atmospheres from the past, or the work of Jorge Otero-Pailos, who preserves the dust that history has left on buildings, history is becoming the content of architecture. But this is not an explicitly populist postmodernism. We're seeing a historical reflection, on the object, pushed back onto the surface of the object; it's “history without historicism.” So it's a reflection of a historical mentality, but it's not one in which you say, “That's a classical building.” The interpretation and the thing exist within each other, similar to how you described it, but history is very important.

D. Graham Burnett

‘History without historicism.’ That's a very elegant formulation of the historicity of a cabinet of curiosities, right? It is only historicism that can “redeem” the merely historical aggregation of past particulars, and it does so by affording that dreaded (if also irresistible) *theoretical* basis. As theories go, it's pretty flat-footed, but it is big and powerful and flat footed. Historicism can thump just about any solid proposition, *mano a mano*. That is the Nietzschean point: there are no definitions, only genealogies. Are you really willing to live in that world? It should feel a little odd. The only out, as far as Nietzsche was concerned, was art. And indeed, perhaps this ‘history without historicism’ play that you say is happening in architecture parallels a certain kind of pseudo-anti-historical “play” that's happening in contemporary art right



Jorge Otero-Pailos peeling back a wall.  
Michele Nastasi for *Art 21 Magazine*

now, where the archive becomes a medium for artistic works, or creative types navigate and generate historical records, and historically oriented “research practices” are characteristic of certain forms of artistic life. All well and good, except I do think at a certain point, the old school critical thinkers are going to put to us the question: Isn’t this just so much miscellanea? Isn’t this ostensible omniverousness just the recrudescence of a simple kind of bourgeois, self-stroking with mucho do-dads? Do-dads that are kind of, ‘Oh! How, um, curious! [cue frisson] How...interesting!’

David Gissen

It has a pretentiousness.

D. Graham Burnett

Well, it might be even worse than pretentious, which is, at least, a kind of style. We might be looking at something closer to the dreaded *death-by-a-thousand-medium-sized-dry-goods*, you know? And right there we’re back again on the basic problem, which is *particulars*. Things. Dumb things. They don’t say anything. You just aggregate a bunch of *freaking things*, and then what?

David Gissen

Obviously the word *bourgeois* is extremely loaded, right? Because it talks about not only pretense, but frivolity, and a certain kind of audience, of a particular class. But, just to pick up on that point specifically, you can also see the examples I brought up as part of a working class history. You can see it as neo-Marxist. If I’m going to preserve the dust of a factory in a city, I’m acknowledging the indices of a certain form of labor that no longer exists in the city. Today, when I watched workers washing the Bank of Montreal building, they’re creating an *image* of a building that reproduces the post-industrial sky under which it sits; the sky that no longer has smoke. They’re making that building a reflection of the sky overhead. And I think developing a curatorial or preservation-oriented approach toward pollution, of all things, is far from bourgeois. In fact, I would say that it definitely brings imprints of a history that is gone in every American city, which is both an industrial and a working class history, back in and through an architectural image or form of representation. So I think we need to look more closely at the material at hand, and see how they potentially enforce our memory

of certain forms of economy and labor that don’t appear as meaningful aspects of a city’s history. Personally, I think that’s very far from a kind of middle class city. It’s only upper middle class in the sense that we recognize that this doesn’t exist anymore in any kind of productive, economic fashion.

D. Graham Burnett

OK, so, politics. We get to politics. But only in things. So, tag me, I want one more thing. [Tag]

I want dots. 1946. Rome. The semi-fascist Italian philosopher of art Cesare Brandi is the founding director of the *Istituto Centrale per il Restauro* (the Institute for Restoration), which had been created under Mussolini to help restore the grandeur that was Roman *imperium*, back at a moment when that was much on Mussolini’s mind. “Restoration,” however, had a very different feel after the war, since it meant trying to put back together the shattered artistic heritage of Italy. It is in this context that Brandi develops, and eventually publishes, his “theory of restoration.” Brandi’s theory is one of the really weird and wonderful folds in the fabric of Modernism, and it is an effort to place the relationship between the present and the past (at least in architecture and the arts) on a firm philosophical footing. He was basically a Hegelian, out of the pessimistic, Neapolitan, Benedetto Croce school. As such, he believed that restoration has been painfully split between two camps.

“Empirical” restorers had a kind of *sprezzatura*, or clairvoyant gift, for imagining what ought to happen in that big, missing section in a damaged fifteenth-century painting. Let’s say you have a *lacuna*, and it needs to be filled in. An “empirical” restorer would say, “I know what that should have looked like,” and he paints it in. For Brandi, this is pure forgery.

On the other hand, you have the new “scientific” restorers, who are basically archaeologists. All they want to do is stabilize the damaged object, and put it back on the shelf. Say it’s a broken pot: you don’t try to remake the pot; you take the shards you’ve got, stick them out there, and say, “Look. There was once a pot, and this is what we have left.”



Neither of these methods is right, according to Brandi. Why? Because the empirical restorers fail to understand the sacrosanct qualities of the original work; they corrupt it by mingling themselves with its historicities, and thereby violate its essential originality—which lies in the precise physical form taken by the sacrosanct *idea* of the original artist. All we have of the idea is the material instantiation of the fragments that remain. We can't mess with that. But the "scientific" restorers are even worse, because they don't understand what an art object is; that is, they think they're restoring an *object*, but they forget the *idea*. They just attend on whatever remains of the thing, but in doing so they fail to remember that these bits secrete an Idea—with a capital I; the Hegelian Idea—that demands attention. You can't just leave the painting stabilized in its damaged condition, because we can't actually see the painting if you just give us the canvas with this big hole in it.

So here's his unbelievably crazy and magnificent solution to this problem. It's all about the infinitesimal and the nebulous—remember those? Our themes for this conversation.

The solution is dots. Brandi developed a strategy for restoration, for "in-painting," that involved pure hues, unmixed pigment, and single strokes (nearly invisible, *pixilated* strokes), through which the restorer repainted the missing region, using only the kind of post-Seurat, high-Modernist technique of optical blending to create mixed hues (and painterly forms). Why would you go through such a crazy process? Because what Brandi wanted to do was choreograph your experience of the work of art as an "idea" (super-historical, transcendent), and your experience of the work of art as an "object" (material, historical artifact), by *forcing the in-painted image to dissolve, at a distance, into the painting.*

So imagine, I'm standing ten feet from the painting, and the pixilated region looks exactly like the left shoulder of the Madonna. But once I come close, it resolves back into its pixilated form. At distance, I grasp at the idea of the original work. Up close, I immediately discern the historical object of the original work. Back and forth. Past and Present. Back and forth. Image and canvas. Back and forth. Idea and thing.

So here is Williams' problem—no ideas but in things—moved from the monitory register of the axiom onto a plane defined by the axes of time and space. Thought or Matter? Spirit or Flesh? Forget it. Any fixed answer is going to be the product of standing still. But that won't do. You've got to move, baby. And keep moving.

David Gissen

Like in a tag team.

D. Graham Burnett

Exactly! Like in a conversation...

# NOT-SO-FUNNY PAGES

## *There's a Starman / Waiting in the Sky: Yuri Gagarin sings!*

by Kevin Cannon and Christopher Heaney

What to hum to the cosmos? Surrounded by uncaring vacuum, what to whistle in the dark?

Yuri Gagarin, the first man in space, had time to decide. On April 12, 1961, while waiting on the launch pad in Kazakhstan to take off for his pioneering orbit around Earth in the spacecraft Vostok—depicted wonderfully in this issue's carto-biography by Kevin Cannon—the twenty-seven year-old learned that a minor problem had caused a six-minute delay. His cosmonaut comrade Pavel Popovich worried Gagarin might get restless during the wait; during his pre-flight medical exam Yuri had been pale and quiet, and had sometimes started humming songs. To keep him from getting “bored,” Popovich went to see about piping some music over the radio. A few minutes later, Sergei Korolev, the father of the Soviet Union's space program, asked if Gagarin could hear it.

“Nothing yet,” Gagarin replied.

“Of course, that's the way musicians are,” said Korolev. “Now they're here, now they're there, but they don't do anything fast, as the saying goes, Yuri Alekseyevich.”

On came the music.

“Oh, now they've done it,” Gagarin said. “They gave me love songs.”

“A love song? Good choice, I'd say, Yuri.”

Popovich came back on the line. “Yuri, they gave you the music, right?”

“They gave me the music, all is well.”

“Well, well, now you won’t be so bored.”

Half an hour passed. Gagarin stayed cheerful. He kept his heart rate at sixty-four beats per minute. The music was presumably cut by the time mission control told him to turn his volume up to loud. As 0906 hours turned to 0907 hours, in kicked the ignition.

“POYEKHALI!” Gagarin shouted. *Off we go!*

Humanity, shaking hands with the cosmos. Weightlessness, before Kubrick’s 2001 made Strauss’s ‘Blue Danube Waltz’ its soundtrack. Gagarin, the first man to see two dawns on one day.

The flight lasted 108 minutes. For ten of them near the end, the capsule failed to separate from the instrument module, and Gagarin spun on three axes. The capsule separated, righted, and flames began to lick its sides. It was then, perhaps, that Gagarin began to sing or whistle—or so he later told Nikita Khrushchev—a tune by Dmitri Shostakovich.

“The Motherland hears, the Motherland knows/Where her son flies in the sky!”

Seven kilometers above the ground, Gagarin was ejected from the spacecraft, presumably no longer singing. He landed in Siberia, assured a farmer and her daughter that he too was a Soviet, and went to find a phone to call Moscow.

Back home, Yuri’s sister Zoya waited nervously for reports on the radio. The cheerful patriotic music stopped, and it was announced that Gagarin had been enrolled in the Komsomol Central Committee Roll of Honour. Zoya thought it was a prelude to announcing his death.

It was not. That moment would come seven years in the future, during a training accident. When the music returned in 1961, Zoya took heart that Yuri was safe.

The above exchange draws from three translations: this awkwardly translated transcript of the launch; Asif A. Siddiq, *Challenge to Apollo: The Soviet Union and the Space Race, 1945-1974* (Washington, D.C.: Nasa History Division, 2000), 276, and Jamie Doran and Piers Bizony, *Starman: The Truth Behind the Legend of Yuri Gagarin* (New York: Walker & Company, 2011), 101. Some space historians have raised red flags about some aspects of *Starman*, particularly its reliance on one ex-KGB source, but for this sequence—and the sequence of events rendered in Kevin Cannon’s narrative—it flies.



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